

# Table of Rates, or Fixed Full Monthly Payments.

Table A.—For \$1,000, and \$5 per week. For \$500 and 7.50 per week. For \$300 and 10.00 weekly benefit.

Table B.—For \$500, and 3 00 per week. For \$300 and 5.00 per week. For \$150 and 7.50 weekly benefit.

Table C.—For \$250 at death only. For \$125 and 3.00 weekly benefit. For \$75 and 5.00 weekly benefit.

Table D.—For \$100 at death only. For \$50 and 2.00 weekly benefit. For \$25 and 3.00 weekly benefit.

A	B	C	D
1 37	83	58	30
1 40	85	59	31
1 42	86	60	32
1 44	87	61	33
1 46	88	62	34
1 48	89	63	35
1 51	90	64	36
1 53	91	65	37
1 57	93	66	38
1 61	95	67	39
1 65	97	68	40
1 69	99	69	41
1 73	1 01	70	42
1 78	1 04	71	43
1 84	1 07	72	44
1 89	1 09	74	45
1 96	1 13	76	46
2 02	1 16	82	47
2 09	1 19	84	48
2 17	1 23	86	49
2 26	1 28	90	50
2 37	1 33	95	51
2 47	1 38	1 00	52
2 60	1 45	1 05	54
2 75	1 52	1 10	60
2 92	1 61	1 15	65
3 11	1 70	1 20	70
3 32	1 81	1 30	75
3 54	1 92	1 40	80
3 78	2 04	1 50	85
4 05	2 17	1 60	90
4 34	2 32	1 70	95
4 65	2 47	1 80	1 00
4 99	2 64	1 90	1 05
5 35	2 82	2 00	1 15
5 74	3 02	2 15	1 25



... campaign the coming winter  
of a constitutional amendment  
regarding the manufacture and sale  
of intoxicating liquors as a beverage.  
The Home Mission Board reported  
they have bought the meeting house  
in Musky for \$700, and seated it for  
a series of meetings was appointed  
to be held there on the 7th, to be conducted  
by G. Romack, and others. It is  
for Friends, with a wide open  
invitation to all ministers adapted to mission  
work, as well as the general pastoral  
work of building up a new church in a  
place called to settle there for a while  
where there is a good opening. Con-  
ference solicited.

The board also appointed a sub com-  
mittee to hold two days' meetings, or  
if thought best, at each of our meetings  
in the quarterly meeting.

Sabbath School Conference,  
to be held as regularly as the quarterly  
meeting for the past twelve years,  
will have an interesting session at this time.

Of the clerk I want to read  
the minute of advice of the  
Ohio was directed to the attending  
ordinate meetings, he said, "I

minute of the kind he had  
wanted to correct a report that  
circulated in some localities, that  
they had left Friends, and  
were going for some other denomination  
to lay a foundation whatever in the

F. C. STANLEY

Wilmington, Ohio.

... new meeting house in  
... N. Y., was opened for  
... on the 2d inst. The house  
... with Friends and other re-  
... village and vicinity.

# TABLE OF THE PROPER PROPORTION OF THE HIGHT OF INDIVIDUALS TO THEIR WEIGHT.

HIGHT.		WEIGHT.
Ft.	In.	Lbs.
✱ 5	1.....	120 ✱
5	2.....	125
5	3.....	130
✱ 5	4.....	135 ✱
✱ 5	5.....	140 ✱
✱ 5	6.....	143 ✱
✱ 5	7.....	145 ✱
✱ 5	8.....	148 ✱
✱ 5	9.....	155 ✱
✱ 5	10.....	160 ✱
✱ 5	11.....	165 ✱
✱ 6	00.....	170 ✱



ALL

OWED OF GOD TO BE PUT IN TRUST WITH T

NEW YORK,



See  
"My Home Book"



My Home Book



When the application is received, signed by the applicant, and containing the necessary facts as to age, occupation, habits, physical health and condition, and the certificates to the same effect of his family physician, his friend, and the medical adviser appointed by the company for the place where the examination is made, it is inspected by the president, and, if in his opinion clear from all objections, he authorizes the issue of a policy. If ques-

tionable in any respect, he consults the medical examiners in the office, and decides after such consultation whether the issue of a policy is expedient or not. No policies are issued without such examination and approval.

The granting of policies to persons who shall reach at least the longevity designated by the life-tables is the problem a company seeks to solve in the selection of parties applying for assurance upon their lives. Although it is impossible to foretell whether each individual so selected will reach his expected duration of life, yet experience has amply demonstrated that persons who have inherited a sound constitution from their parents, who live in a salubrious climate, who pursue a healthful occupation, who are of temperate habits, who carefully observe the laws of health, and who, in short, present in their personal conformation the *mens sana in corpore sano*, will, as a class, attain to greater age than those who exhibit opposite characteristics.



the same style with that of the first mentioned, has been printed on photographic plates, through the liberality of H. M. Schieffelin, of New York, and generously sent to persons interested in such studies. It is a letter from the King of Musadu, a town far in

the almost ashamed to say this, even in a parenthesis. It has too much the look of a sort of patronizing condescension, or of making a wonder of what should be no wonder at all. There is no such thing as a letter in the literary world. There are, however, considerations for whose information it was thought best to stand.

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THE GOSPEL, EVEN SO WE SPEAK, NOT AS PL

THURSDAY, APRIL 6





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W E P

THE GOSPEL, EVEN SO WE SPEAK, NOT AS PL

THURSDAY, APRIL 6





Enough of this class will live beyond their expectation to compensate for the death of those who do not reach this period; thus the Company will obtain, as a safe basis of calculation, a knowledge of the average duration of life which attaches to each respective age—a most important element in the science of Life Insurance.

Predisposition to disease must be regarded under two aspects for the purpose of life assurance.

*First.* Where the family history is such that from it alone the applicant is considered to be predisposed to the disease of which his parents died; as, for instance, where the death of both these persons was the result of consumption.

*Second.* When one parent and a large number of brothers and sisters, or other relatives, have so died, conjoined with personal predisposition to the disease. In these cases the liability to phthisis is so great that the rule is to reject such risks.

Other instances occur, in which one parent may have died of disease the predisposition to which in the offspring is considered hereditary; and yet the party, by reason of age, conformation, and sound state of the vital organs, with an affinity to a healthy parent, may be fairly entitled to a policy of assurance. It may be well to remember that consumption is more likely to be transmitted by a mother than a father. In many instances predisposition to disease may be acquired independently of hereditary tendency, as from







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habits of life, occupation, exposure, accidents, unhealthy residence, previous attacks of disease, etc. A strict examination and consideration of all the facts of the case is made; but, if, after these conditions have been complied with, the applicant be recommended by the medical examiner, the practice is to entertain the consideration of such risks, the only condition being that the policies so issued shall be for a moderate amount, and that the party shall have attained at least the age of thirty-five years, and, by reason of showing a just proportion of height to weight, a normal condition of the vital organs, a natural state of the various functions of the system, by firmness of tissue, by following a healthful employment, and by habits of temperance, in eating and drinking, etc., shall demonstrate that he possesses a sound organization.

It is proved by experience that, while insurance upon lives during the middle portion of existence has been attended with better results in the United States than in Europe, the reverse holds good in reference to risks taken in the earlier years of life. The same general fact has been observed as regards the advanced ages of life, but of late years such risks are understood to be improving. Whether this result be due to climate, to our institutions, to our social state, it is of importance, as indicating that great caution must be exercised in the selection of risks at both these extremes of life. It is quite probable that the

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three last questions, it will be noticed, complete each other; the first one being rather general in character, the last two more specific. The subsequent questions relate to the organs of respiration and circulation, to hernia, to the urinary and other abdominal organs, etc., and differ in nowise from the questions now generally used for the same purposes.

### Correspondence.

TO THE EDITOR OF THE MEDICAL RECORD.

THE question of medical examination for Life Insurance has become so important with the numeri-

will happen that a man just taken away from his evening meal, half frightened at the sudden visit of the doctor, presents a pulse of 90-100, and perhaps even some undulations of the beats of the heart, which are not natural to him.

No! Let every applicant prepare himself, and go to the office of the examiner, and present himself at a time when he is quiet, not overworked, when his mind is at ease, when he takes his time to be examined—and it will be an easy matter for the right examiner to make up his case correctly.

But who is going to take the initiative to correct all these shortcomings of the old plan? Has any step been taken to arrive at some understanding, in which way to make these reforms? I do not think so. Would it not be right if one of the profession connected with life insurance would issue a call for a meeting of the most prominent amongst these gentlemen, in which all these questions could be discussed and brought to a certain and more profitable condition? I should advise you, Mr. Editor, since you have already taken up this question, to try if you could not act on these suggestions, and bring these matters to an issue.

H. L.

NEW YORK, Sept. 20, 1873.

### Miscellaneous.

EXCESSIVE WEIGHT.—Medical examiners occasionally meet with cases like the following, which occurred during the past month:

The applicant, a stout, healthy-looking man of 62, was brought before the medical examiner by one of the company's regularly appointed agents. The questions in the application had all been answered favorably. He had had no previous sicknesses, had never been rejected by any company, and his family history was good. His pulse was of good volume, 68 to the minute, and perfectly regular. His height was 5 ft. 3 in., and weight 182 lbs., most of it being concentrated about the abdominal region. There was no fulness of the vessels in the region of the neck and face;—in a word, he had every appearance of a man who was temperate in his habits and enjoyed habitual good health. Nevertheless the examiner refused to carry the examination any farther, on the ground that the man's excessive weight was a sufficient cause for rejection. The applicant then inquired why his weight should render him less likely than other men to live out his full expectancy. The reply was, that, other things being equal, excessively heavy men were more liable to die of apoplexy. "Well, I guess you are about right, doctor. Since your mind is made up not to accept my application I might as well tell you that three or four years ago I had a kind of apoplectic attack, followed soon by a second. I at once commenced to live on plain, wholesome food, and ate always in great moderation; and since then I have had no trouble of any kind."

Rules regarding weight and family history often operate unjustly, but that they occasionally save the company a few thousand dollars is rendered highly probable by the instance just related; for it can be safely assumed in this case that the applicant is not at all likely to live five years longer, much less the thirteen expected.

PHYSICAL ASPECTS OF PRIMOGENITURE.—Dr. J. Stockton-Hough's article on the "Physical Aspects of Primogeniture" will not appear in this number of the RECORD, as already announced, but in the Dec. 15th number.

*Life Insurance Data*



kept very distinct in England. The most eminent surgeon is merely styled "Mr."; the title "Dr." being only applied to physician. As a rule surgeons are more exposed to the various causes of death than physicians, and the result is seen in the higher rate of mortality amongst them.

Quite as remarkable is the mortality in the legal profession. The positions of attorney and barrister, like that of physician and surgeon, are quite distinct in the United Kingdom. The attorney does all the preparatory work in a suit, and lays the whole of it before the barrister. The clients in the case see the attorney and impart to him their facts. He prepares these for the barrister, who hardly ever consults at all with the party in the suit. The barrister pleads in the open court and does all public work in conducting the case—the attorney sits in silence and supplies his superior with all documents. The heavy plodding, wearying office work, in close rooms often, is thus done by the attorneys: the lighter and more agreeable work by the barristers. The consequence is that barristers die at about the same rate as Protestant clergy, or 10.9 to the 1,000—while the attorneys die at the rate of 16.2 per 1,000; a heavier death-rate than that amongst many of the manufacturing classes.

Amongst all the workers in metals it will be observed that copper miners die off quickest; copper and lead manufacturers faster than those employed in any other manufacture; and coppersmiths somewhat in excess of any other smiths. This is the natural result of the deleterious influences of copper on the health of the human body.

Facts like these have led English Life Insurance Companies to be very cautious about insuring men engaged in certain occupations. There is hardly any respectable company amongst them now that will at all insure the lives of any class of liquor dealers. Some companies accept good, sound lives of hotel-keepers, and others of that class, at \$2.50 extra rate per each \$500 insured. The liquor traders generally object to pay this extra, so that, practically, no company now insures their lives. They established some years ago, themselves, "The Licensed Victuallers' Life Insurance Company," to meet this want, fancying their lives as good as any others. The death-rate was so great and the claims so many—none but drink-sellers being insured by the company—that in a few years it became bankrupt and had to be "wound up" in the Court of Chancery.

All persons engaged in mining occupations are, of course, charged extra for the risks. We think that, as these results of occupation upon health and longevity come to be more carefully analyzed and tabulated, the various life insurance companies must come to insure the different classes at various rates, corresponding to the mortality. It would, at least, be an interesting work just now for any actuary to engage in the preparation of equitable tables of rates, without profits, insuring all classes of lives according to the rate of mortality known to prevail amongst their ranks, according to occupation.—*Insurance Times*.

#### NEW MEDICAL EXAMINERS' BLANKS.

IN the last number of the RECORD (October 15) we briefly alluded to the fact that two of the companies had adopted new forms of "application and medical examiner's report." Since then a third company has made a thorough revision of these blanks, and has adopted new forms which in the main resemble those now used by the "John Hancock," in which, as we

have already stated, all the questions of a medical nature are printed on the side devoted to the examiner's report.

As many of our readers will be interested to know in what respects the blank intended for the medical examiner to fill out differs from those with which they have hitherto been familiar, we shall mention briefly the changes that have been introduced.

The first part of the medical examiner's report consists of a series of simple medical questions, which he is to put to the applicant, and which the latter, if he be a man of average intelligence, will be able to answer without the assistance of the physician.



ceive a fee from the company, he should not to injure its interests by word or action. Of course, if the company is in a bad financial condition, and he believes such to be the fact, he should refuse to serve as its examiner, for the very reason that he cannot conscientiously speak well of its soundness. But if he is simply opposed to the institution of life insurance, though believing that this particular company is financially sound and honorable in all its dealings, he should either keep his opinion to himself in the presence of an applicant, or else refuse to serve as an examiner.

We cannot avoid the belief that in the few instances which have been brought to our notice, the examining physician was not conscious of doing any harm by the statements which he made. We are confident, too, that if he had stopped for a moment to consider the possible harm he might do a needy agent, he would have quietly refrained from expressing his opinion.

## OCCUPATION AND HEALTH.

THAT there are healthy and unhealthy occupations is known to all classes in society. What they really are, is, however, not so well understood. It is the duty of life insurance companies to ascertain what are healthy and unhealthy businesses. It is the work of the actuaries to clearly set forth what the rate of mortality in each occupation is, so far as that rate can be properly obtained. Considerable attention has been given to this subject in recent years, and we now know pretty clearly and definitely what occupations are attended with a high rate of mortality.

Perhaps the best paper on the subject, recently published, is one read at the Institute of Actuaries, in London, England, by Francis C. G. Neison, Esq., F.S.S., a leading member of the Institute.

Taking the census returns of Great Britain, giving the various occupations of the whole people, and the death-rate amongst those from 25 to 65 years of age, Mr. Neison has prepared tables of mortality setting forth the average deaths, per 1,000 persons living, in each occupation. Again, taking the returns of Friendly Benefit Societies with which Mr. Neison has been long conversant—he forms a similar table, which varies so little from the other as to be only confirmatory of it. The members of benefit societies are “select lives,” examined by a medical officer. This would naturally give a rather lower death-rate than amongst the general community. The difference is, however, scarcely worth notice.

It will thus be seen that the lowest death-rate occurs amongst “Domestic Gardeners,” *i.e.*, gardeners who reside in the houses of their employers and are thus well cared for and well fed. The very highest death-rate is amongst hotel-keepers, who, though having little or nothing of any kind of labor to perform—living at their ease and partaking of the best food—yet die off at nearly quadruple the rate of domestic gardeners. Mr. Neison observes on this point: “Though no advocate of teetotalism, the table certainly presents facts of the utmost importance as to the influence of drinks and stimulants upon health. In every one of the different classes of drink-dealers, the mortality, it will be observed, is very high, being lowest for beer-sellers. Innkeepers and hotel-keepers appear as the least healthy. In no other class of results is such a high death-rate presented as amongst the various occupations connected with drinks and stimulants.”

Amongst professional gentlemen the lowest death-rate is that prevailing in the ranks of the clergy. The



*Example.*—A man 6 feet in height should weigh 170 lbs. One-fifth of 170 = 34, which subtracted from 170, leaves 136; hence he would be accepted at the latter figure, all else being favorable.

Of course every one is not expected to weigh and measure exactly these average numbers; but, as a rule, 20 per cent., or one-fifth, is the maximum variation compatible with health.

## ABUSE OF POSITION.

BY A MEDICAL DIRECTOR.

OUTSIDE of the larger cities the educated physician holds a very influential position among the people to whose physical wants he ministers. His opinion is often asked on matters which are by no means professional in their nature, and it nearly always carries with it great weight. Every individual, for instance, who has himself been relieved of suffering by the doctor's skilful treatment, or has had the satisfaction of seeing his wife or child apparently rescued by the doctor's efforts from the jaws of death, will be very likely afterwards to place the utmost faith in the physician's advice, upon no matter what subject it may be given. A word or a smile from him will often be sufficient to completely undo the hard-earned results obtained by the life insurance agent. Let us be more explicit. The agent, by dint of persistent and oft-repeated efforts, has succeeded, we will suppose, in inducing a young merchant's clerk to take out a policy of \$5,000 upon his life for the benefit of his wife. The application is filled out and the young man is brought before the examining physician. In the course of the examination the applicant very naturally asks the doctor if he does not think it a good thing for a young man in circumstances like his to insure his life for a moderate amount. "Well, I don't know," says the doctor; "there is a good deal of humbug about this business of life insurance, and I for one would prefer to put my surplus into the savings bank."

The applicant is a very gamey fish and has to be managed carefully, or he will be lost to the agent. Even after he has been hooked there is no certainty that he will be landed safely in the company's hands, premium and all.

In the case under supposition the applicant places greater confidence in the doctor's few words of advice than in the elaborate and persistent arguments of the agent, and as a result refuses to take the policy when

signs exist, the vital capacity being reduced in first stage of consumption. The following table, after Dr. Davis, exhibits this more clearly:—

HEIGHT.	CUBIC INCHES.
5ft. 0 in. to 5ft. 1 in. ....	176
5 " 1 " to 5 " 2. ....	177
5 " 2 " to 5 " 3. ....	189
5 " 3 " to 5 " 4. ....	193
5 " 4 " to 5 " 5. ....	201
5 " 5 " to 5 " 6. ....	214
5 " 6 " to 5 " 7. ....	227
5 " 7 " to 5 " 8. ....	228
5 " 8 " to 5 " 9. ....	237
5 " 9 " to 5 " 10. ....	246
5 " 10 " to 5 " 11. ....	247
5 " 11 " to 6 " 0. ....	257

The relation between the weight of the body, the height, and circumference of the chest at nipples is important. The following is Dr. Steedman's table:—



though, as several well-authenticated cases prove, it may but supplementalize suppressed menstrual or hemorrhoidal discharges, still it must never be looked upon with unconcern. Hemorrhage from, if we may use the term, healthy lungs, even though it may sometimes relieve nature of a surplus of blood, must, however, have a deleterious effect on the system. In large quantities and frequent recurrence, it tends to produce anæmia, one of the most favorable fields for the development of disease of the chest."

Insanity belongs to the class of hereditary diseases. Where more than one case has occurred in the generation of the applicant he should be rejected, more especially if he either exhibits any marked eccentricity of mental or nervous organization. Insanity usually does not shorten life, but such people are liable to commit suicide.

Cancer and gout belong also to the class of hereditary diseases, but are not so important as those already mentioned. The latter, however, may lead to disease of the kidneys, as described by Dr. Todd.

Hereditary intemperance occurs next to phthisis in importance. No applicant who is intemperate in the use of alcoholic liquors should be accepted. But the great difficulty is to determine who is intemperate. Few men will admit that they are so. If the applicant is an acquaintance, you should make your conclusion from personal knowledge; if a stranger, judge of his habits from general data. Little reliance can be placed on answers to direct questions. Dr. Steedman asserts that habitual intemperance is usually productive of fluid stools in the morning. This fact should be remembered, and your questions applied in that direction. Dr. Brinton thus describes the habitual tippler:—He has a "fiery, unctuous skin, with its secretions reeking with volatile fatty acids; red, ferrety eyes, with fitful glare rather than gleam; furred tongue, fetid breath, and trembling limbs. These are the chief characteristics of drunkards."

With one class of men alcohol acts only as a stimulus to the nervous system, giving, however, no real power, but finally producing exhaustion. Others are really improved by its moderate use. Digestion is thereby promoted, and the body gains in strength. In this class the habit, if kept in moderation, does not shorten life; but the habit is apt to grow, and will, if persisted in, finally destroy the health. Tavern-keepers have been noted as special instances. The incentive and temptations to intemperance are so great, that few resist it successfully. Every saloon-keeper runs this peril, and the younger the man the more dangerous the risk will be. The reformed drunkard is not a good life for insurance. His constitution is usually destroyed, and he is liable to return to his old habits on the occasion of temptation.

The excessive use of tobacco, it has been remarked, often causes palpitation of the heart, irregularity of pulse, dyspepsia, with obstinate constipation, debility, and nervousness. Any applicant presenting one or more of these symptoms should be rejected, whether due to tobacco or not, since they are certainly aggravated by its use.

The occupation of the person to be examined must also be taken into account, some employments tending towards disease and others unhealthy.

The arm should be examined for the scar left by vaccination. Mr. Marson has shown that the mortality from small-pox after vaccination varies with the number of marks. His observations are based on 15,000 cases. He found in every 100 cases of small-pox, after vaccination, having

1 mark, 8 died (7.73)

2 " 5 " (4.7)

3 " 2 " (1.95)

and in every 200, with 4 or more marks, only one died. Each scar should be distinctly covered all over with little pits like the end of a thimble, and accompanied by loss of substance. Some people are said to have died of old age, when from subsequent investigation it may appear that cerebral hemorrhage, paralysis, or idiopathic gangrene carried them off. The disease occurring in elderly people, called by Dr. Hammond "multiple cerebral sclerosis," is insidious in its approach. It is recognized by tremor, beginning at first in a group of muscles and gradually extending; derangement of sensibility; sometimes hyperæsthesia, pain in the head, characterized by sharp paroxysms and clonic spasm of rectus muscles of eyeball.

Many cutaneous diseases cause little constitutional disturbances, and as long as an individual remains unaffected with any acute inflammatory affection, the existence of an ordinary skin disease will not in any respect diminish the average chance of longevity. Furunculi, or marks of tearing and scratching on the skin due to pruritus, should make us test the urine for sugar, as these complaints are common in diabetes. Indeed in all cases the specific gravity of the urine ought to be taken, and the urine tested, at least, for albumen. In one form of kidney disease,—viz., waxy degeneration,—the patient has a sallow complexion, occasional diarrhoea, and little or no albumen in urine. The use of the microscope is necessary if any suspicion exists. Retinitis is often due to Bright's disease.

In the history of past ailments presented by the applicant the mention of having had an attack of acute rheumatism should make us give particular attention to the heart, which is so liable to suffer in that disease.

Chronic pleurisy manifests itself in two conditions, *with* or *without* retraction of the side. A good many people who offer for insurance have suffered from an attack of pleurisy at some period of their life. After an attack the chest walls may be simply restored to their natural position, or they may sink inwards. These cases require very careful consideration on the part of the medical referee. If taken at all, an additional number of years, equivalent to the in-

acterized by dislike for fatty food that is the forerunner of phthisis.

Deformities of the chest. The "pigeon-shaped" chest is not so unfavorable. Rickets in children often



We therefore observe that with a peculiar build of body there is a particular standard of health and a liability to particular pathological changes. The conformation of body is dependent partly on inheritance, and is largely affected by external conditions. We know that plants or beings developed quickly are apt to die rapidly. Durability and slow growth go together. Vast numbers of children in large towns, the offspring of degenerate parents, shoot up quickly, like ill weeds, to end shortly their delicate and sickly lives. The phenomena of health and disease are the certain results of antecedent conditions.

The intermarriage of blood relations is not judicious. For these close unions have a tendency to intensify in offsprings not only any good quality in the parents, but also the bad—such, for instance, as the hereditary diseases, insanity, phthisis, gout, scrofula, etc.

Dr. Lambert, of New York, believes that in the diagnosis and prognosis of disease, the inherited or internal and absolute condition of the patient are of great consequence, and should be specially noted, so that complete reliance need not be placed upon the uncertain or incomplete statements of the applicant. Mature man, in all his sensations, emotions, intellections, and volitions, so far as they are physical phenomena, is the co-ordinated resultant of all his organs, and of constantly varying external conditions. Amongst the most important antecedent to consider, in valuing an individual life, is the longevity of ancestors. Inherited disease usually appears at about the same age in the inheritor as it did in the person from whom it was inherited. For example, phthisis. In some cases, however, it occurs earlier in the descendants than in the ancestors; but the general rule is that inherited fatal diseases have their issue at about the same age in a subject as that at which a near ancestor died.

The *special* tendency exhibited by some diseases to appear in the offspring of those affected with them may, and frequently does, remain latent for years, or even for the life of the individual. The next generation, however, sometimes suffers from the same class of complaints; consequently, the medical referee must not only look to the parents of the applicant, but to his grandparents, and, indeed, whole family.

A minute and searching examination will enable us to answer the first question; but before entering into details regarding the second it would be well to offer a few remarks upon family peculiarities and diseases.

Dr. Steedman, of St. Louis, says:—"Consumption stands at the head of the list of inherited diseases, but it can be acquired independent of any hereditary taint." Niemeyer held the doctrine that phthisis is a frequent result of chronic inflammation, especially of pneumonia, and that a copious spitting of blood in persons predisposed to phthisis frequently does good by relieving congestion. Dr. Steedman holds that when a parent has died of acquired phthisis, free from hereditary taint, those children born before the development of the disease should be considered as comparatively exempt. "Few applicants," he says, "ever admit that a parent or other near relative has ever died of phthisis. It is frequently explained away by some special cause, as exposure to cold, or childbirth. The last excuse is especially calculated to deceive. It should be remembered by the medical examiner that phthisis often stands in abeyance during pregnancy, and as soon as delivery occurs runs a very rapid course." Phthisis occasions in Great Britain about one death in seven, or 15 per cent. of the whole mortality.

When one parent has died of phthisis the applicant should be rejected, unless it was a case of acquired phthisis dating years after his birth, and that the applicant has had very good health, and passed the age of forty-five years. When neither parents have died of phthisis, but two or more brothers or sisters have, he should be rejected, as this indicates a feeble organization or positive inherited liability to phthisis. If the applicant is amongst the last of a large family, the majority of which have died young, he should be rejected, because the evidence is sufficient to show that he or she belongs to a feeble stock. The few years following on puberty Dr. Brinton considers the most liable to phthisis, especially in unmarried females.

Hæmoptysis is a serious item in the calculation, as most of those who have suffered therefrom die of consumption. Niemeyer believes that hæmoptysis may occur, however, without any dependence on tubercle, but it may become a cause of tubercle by the effused blood undergoing caseous degeneration and exciting pneumonic processes. Skoda, of Vienna, holds that blood effused in the air-passages can never do so. Blood, he maintains, is a harmless, bland, unirritating fluid, and is easily absorbed, especially the fluid parts, merely pigment being left. Every person who has had hæmoptysis, unless dating many years back, should be rejected. Spitting of blood by applicants is often said to come from the throat, or to be due to sudden exertion. Dr. Mason remarks, in the *Dublin Medical Journal*:—

"The fact that hæmoptysis is not constantly prior or subsequent to any organic disease of the thoracic viscera has been frequently substantiated. Many people during puberty having suffered from repeated attacks of hæmorrhage from the respiratory organs, still arrive safely at the goal of ripe old age, leaving at their death no appreciable pathological signs of their ever having suffered from it. Though such is sometimes the case, we should still regard every case of hæmoptysis coming under our notice with suspicion, and endeavor to arrive at a knowledge of its direct cause. The more obscure this is, the less we should relax in our attempts to discover its origin. Hæmoptysis through mere ensanguinification, except, of course, such a hæmorrhage as would result from a wound or the bursting of an aneurismal sac, is seldom directly dangerous to life. Though it may occur, as above stated, in persons whose lungs during life afforded no physical signs indicative of its origin, or after death exhibited no traces of its ever having taken place, and

In American 15 to 17 per cent.



to the examiner in sending in his opinion on the acceptability of an application.

To be sure it would then be necessary to be rather more careful in the selection and appointment of the medical examiner; for heretofore, when any medical man was recommended by an agent (because he was his friend or perhaps his partner in business), he was taken, and appointed to this responsible office.

Select from among the profession men of experience in practice, and of undoubted integrity, and so compensate them that they will consider themselves well paid for a hard task, and I am sure they will take the most pains to serve the company honestly without regarding the interest of any agent, and save many a mortification to the life insurance companies.

The second point I am thinking of is, that the medical examiner is often obliged to visit the applicant at a late hour of the night, when he finds him just returned from hard bodily work, worn out, hungry, and sometimes not in the best of humor, and then he expects to get a just and correct opinion of the health and constitution of the applicant. Then it



The second portion of the medical examiner's report consists of a series of questions addressed by the company to the physician. They are as follows:—

“Have you carefully questioned the person examined concerning the matters mentioned in the foregoing questions, and are the statements given in reply apparently correct?” “Does he look older than the age stated; if so, how many years older?” (Here follow the data concerning height, weight, etc.) “What is your opinion of the influence of his occupation on the risk?” “What is your opinion in regard to his residence?” “Do you consider him acclimated?” “What is your opinion in regard to any former injury or sickness?” “Is there any indication that he is not now entirely well?” “Has he the appearance of a person addicted to the use of intoxicating liquor?” “Is there anything in his speech, looks, gait, or manner of conducting himself that would lead you to suspect that the party has any disease, organic or functional, of the brain or of any other portion of his nervous system, or any predisposition thereto?” “Has the party paralysis, cramps, tremors, atrophy or rigidity in any portion of his muscular system?” “Is the gait firm and elastic?”



“Are you at the present time in good health?” and, “Do you ordinarily enjoy good health?” The third question reads: “Have you ever been predisposed to or had any of the following diseases or infirmities? (Answer *yes* or *no* opposite each).” Then follows the list of ailments, which in most blanks is incorporated into the application proper. To this list a few new items have been added, as for instance: dizziness, diarrhoea, delirium tremens, frequent desire to urinate, jaundice, lumps or swellings in any part of the body, open sores, pain in back (frequent or severe), swelling of feet or hands, and stricture of urethra. The next two questions are intended to supply any omissions that may exist in the foregoing list. The question relating to accidents is amended so as to read as follows:—“Have you ever met with any accident or personal injury, or undergone any surgical operation?” The questions relating to family history are preceded by a note in fine print, which reads thus:—“In stating the cause of death, avoid such expressions as “general debility,” “change of life,” “fever,” “exposure,” or any other indefinite term. If the expression “child-birth” is used, be particular to state how long after the delivery of the child, and also whether there were any symptoms of chest trouble, viz., cough, expectoration, loss of flesh, night-sweats, etc.” The question relating to habits is broken up into a number of subordinate questions, as follows: “Have you *ever* used intoxicating liquors?” “If so state whether daily or occasionally, and explicitly to what extent.” “Are you *now* in the habit of using intoxicating liquors?” “If so, state whether daily or occasionally, and explicitly to what extent.” “Have you ever been intoxicated?” “If so, when last?” “Do you use opium in any form?”



cal increase of these institutions; that has any connection with this business ought to contribute his share, so that the public, and especially the managers of those companies, may find out how to improve this most important branch of their business.

As I have been connected with Life Insurance as medical examiner during the past four years, I have taken a more than ordinary interest in the last move of your paper, and I thought that I should give you my view on a few points that have not been mentioned before, and which I think are more important for the solution of these questions than all the others. While the majority of your correspondents enlarge upon the relation between the agents and medical examiner, and give hints how to make the latter more independent of the former, I intend to go a little further into the matter itself, and speak of the making up of the blanks for the medical examiner (which are about the same in all companies). There are questions that ought not to be there, while other and more vital points are omitted. There are questions put in a way to which no answer in a really scientific way could be given, and there is altogether no room left to the examiner to give his opinion of the case as a whole. His simple, short answers to the short questions are sent in to the home office, and applications are accepted, because there was no spot on which the doctor could give a declaration upon some question; and other applications are rejected on the ground that some of these short answers do not tally exactly with the opinion of the medical or other board. I should recommend that a thorough revision of these blanks be made, and that in the new ones there might be questions taken up according to the present standard of medical science; and secondly, that more space and freedom be given



## Medical Department of Life Insurance.

### LONGEVITY;

OR, THE RELATIVE VIABILITY OF THE SEXES: PARTICULARLY WITH REGARD TO THE RELATIVE LIABILITY TO THE INHERITANCE OF CERTAIN TRANSMITTED DISEASES.—CONSIDERED IN RELATION TO THE SELECTION OF LIFE-INSURANCE RISKS, WITH A VIEW OF EXHIBITING THE UNJUSTNESS OF THE PRACTICE OF CHARGING HIGHER RATES FOR WOMEN. ILLUSTRATED, IN PART, BY THE STATISTICS OF PHILADELPHIA, FOR THE ELEVEN YEARS ENDING 1871.\*

By JOHN STOCKTON HOUGH, M.D.

#### PART II.

"Fœminæ præ Viris Longeviores."†

It is useful, in this connection, to inquire whether men are more likely to have hereditary diseases engrafted on their constitution than women, and it is for this purpose that I have made careful calculations of the proportion of males to females dying of the various affections named in the table.

#### OLD AGE.

Of the persons dying of "old age" (60 to 110 years) 65.17 per cent. were women, and only 34.83 per cent. men. In the free white population of the United States, there were, in 1830, 2,041 males and 2,523 females living from 90 to 100 years of age, or in the proportion of 80.88 to 100. In 1840 there were of the same ages, 2,143 males and 3,145 females, or in the proportion of 76.72 to 100. In 1850, 5,183 males and 6,512 females attained these ages, or 79.57 males to 100 females. In 1860, 5,854 males and 7,924 females, or as 73.86 males to 100 females. In 1870, 6,922 males and 9,731 females, or 71.13 males to 100 females attained these ages. It is curious to note that of the persons aged 100 years and above in 1830, 301 were males, and 238 females, or in the proportion of 126.47 to 100. In 1840 the proportion for the same ages was (432 to 285) 151.59 to 100. It would appear from this, that although the mean average duration of life from 90 years up is greater for women than men, yet in extreme ages (above 100) the men exceed the women. Of 46 persons whose names appear on the records of extreme longevity (from 130 to 176 years) only 10 were women, though the one who attained the greatest age (176 years) was a woman.

In the United States, in 1850, 1,077 males and 1,478 females attained to 100 years and above. In 1860, 1,233 males and 1,720 females. In 1870, 1,286 males and 2,236 females. Both of these decades of ages show a growing increase in the proportion of females attaining extreme ages.

Of 1,712 persons attaining 100 years and above, 670 were females and 1,042 males, or in the proportion of 1,000 males to 642 females.‡

In the city of Providence§ for the 15 years ending 1870, 202 men and 445 women died from old age, or 45.37 men to 100 women. In England, 1857, 11,323

males and 15,524 females died of old age, or 728 men to 1,000 women, the proportion of sexes in the living population being 966 males to 1,000 females.

#### ZYMOTIC DISEASES.

Zymotic diseases are generally more fatal among males than females; in England, 1856, 1,248 males and 1,029 females died of small-pox, or in the proportion of 1,212 males to 1,000 females. In Philadelphia (1871), 1,016 males and 863 females died of this disease, or in the proportion of 1,176 males to 1,000 females; under 20 years of age, there were 578 males and 581 females; above 20 years of age, 438 males to 282 females, or 1,553 males to 1,000 females. In England (1856), 137 males and 90 females died of purpura and scurvy; 599 men and 477 females died of rheumatic fever; 4 males and 1 female of hydrophobia; 61 males and 33 females of mumps; 7 males and 1 female of glanders. Two men to one woman died of cholera maligna in Philadelphia, in 1834.

#### SUDDEN DEATHS.

Devergie\* says the difference in the proportion in the sexes of those dying suddenly is enormous, there being but 5 women out of 44 cases, or 100 females to 780 men.

In England, 1851, there were 1,917 males and 1,486 females who died suddenly from unascertained causes, in the proportion of 1,289 to 1,000.

#### MURDER, VIOLENCE, AND SUICIDE.

Nearly 4½ times as many males as females meet a violent death, either at their own hands or by an assassin. In France from 1835 to 1849, on an average, 3 men to 1 woman committed suicide, the proportion being very nearly the same for each year. The U. S. census of 1870 gives 17,517 male and 5,223 female decedents from accidents and injuries. Of these 1,080 men and 285 women committed suicide, or 395 males to 100 females. 1,907 men were murdered, and only 150 women, while 31 men were executed.

#### INTEMPERANCE.

A much larger proportion of deaths from intemperance occur among the male sex, 136.84 to 100, or taking the proportion of the sexes in the population into consideration, there are probably two men to one woman among the decedents from this cause.

#### WOUNDS.

Seventeen men died from the effects of wounds to every woman dead from the same cause.

#### APOPLEXY.

1.20 per cent. of all the deaths were ascribed to apoplexy; of these, there were 123.25 males to every 100 females, or taking the proportion of the sexes in the adult population into account, more than 3 men to 2 women. This is in keeping with the fact of a more frequent sanguine temperament among men than among women; men also have a larger quantity of blood, having a higher specific gravity, and a larger proportion of red corpuscles and other solid constituents, as determined by Dennis, Foedisch, and Le Canu. These facts taken in connection with the function of menstruation in the woman, and greater exposure of men to the elements, would appear to be sufficient to explain the difference in the mortality from this cause.

#### GOUT.

Although Hippocrates and other sages have said that women, children, and eunuchs do not have

\* The writer, in the course of this article, has enunciated theories, some of which are novel and original, and while he fully believes them to be true, he desires it to be distinctly understood that they are not necessarily recognized by scientists generally; and further, the scope of this article gives him no opportunity to prove his position, which he hopes to do at some future time.

† Acta Medic. Berol. Dec. 1, vol. viii., p. 91. Dec. 11, vol. x., p. 59. Cited in Ploucquet's *Literatura Medica*, v. 2, Art. Longevitas.

‡ Easton on Human Longevity, etc. Salisbury, 1799, 8vo, pp. 292.

§ Dr. E. M. Snow's Reports to the Board of Health.

\* Annales D' Hygiène Pub., etc., t. XX., 1828, p. 177.



gout, yet we find in our reports a few deaths of females from this cause, in the proportion of about 1 female to 3 males. In England (1856), 221 males and 39 females died of this disease. Of other constitutional diseases, 825 males and 634 females died of abscess; 60 males and 13 females died of fistula.

#### LOCAL DISEASES.

In England (1856), 78,152 males and 71,759 females died of local diseases, or 1,084 males to 1,000 females.

#### DISEASES OF URINARY ORGANS.

In England (1856), 3,161 males and 1,166 females died of these affections, or 271 males to 100 females; of diabetes, 274 men to 159 women.

#### HYDROCEPHALUS.

In England (1856), 4,161 males and 3,138 females died of this disease.

#### WHOOPING-COUGH.

This affection is uniformly more fatal among females than males, but as the decedents from this cause are nearly always minors, it does not affect the question under consideration.

#### AFFECTIONS OF THE HEART.

The deaths reported from "diseases," "inflammation," and "congestion" of the heart, constitute 2.66 per cent. of the total number of deaths from all causes whatever. By far the larger proportion, 2.15 per cent., of these were adults above 20 years of age. Among those dying before the 20th year of age, there were about 3 boys to 2 girls; while of those dying at 20 years and above there were 95.55 men to 100 women; and when we take into consideration the fact that there are probably not more than 85 men to every 100 women above 20 years of age in the general population, we find that there is actually an excess of 5.4 per cent. of males over females among the adults dying from these affections. It is worthy of observation, however, that the percentage of excess of male deaths among the adults of this class is smaller than that for any of the other affections under consideration, except cancer. Dr. Geo. H. Norris, in his article on Aneurism of the Subclavian Artery, gives 59 cases in which the subjects were males, and only 7 females. (*Amer. Jour. Med. Sci.*, July, 1845.) In England (1856), 254 men and 84 women died of aneurism.

#### AFFECTIONS OF THE BRAIN.

5.21 per cent. of all the deaths reported were from "diseases," "inflammation," and "congestion" of the brain. About two-fifths of the number were under twenty years of age, and the proportion of males to females was as 132.13 to 100, for all ages, 118.45 to 100 for those dying under 20 years, and 324.50 to 100 for those 20 years and above. This proportion of 13 men to every 4 women dying of these affections after the 20th year, is certainly very large, and would seem to indicate some other causes than greater exposure to the elements, and dangerous and difficult occupation. Notwithstanding this much larger proportion of adult males among the decedents from affections of the brain, yet there are more women insane than men. Though there be more of genius among men, there are also more idiots, deaf, blind and dumb, than among women.

#### SCROFULA.

This hereditary malady is much more frequently fatal among males than females, even after they have reached their 20th year. In England (1857), 1,552

males and 1,229 females died from this cause, or 1,262 males to 1,000 females.

#### PARALYSIS.

1.26 per cent. of all the deaths were ascribed to this malady; of these, 122.92 were males to every 100 females. Nearly all of those cases were above 20 years; most of them far advanced in life, yet the proportion of males is very large, the excess amounting to about 17 per cent.

#### INFLAMMATORY AFFECTIONS OF ORGANS OF RESPIRATION.

In England (1856), 28,400 males and 24,508 females, or as 1,158 males to 1,000 females, died from these affections.

#### PULMONARY CONSUMPTION.

Every inquiry about this very fatal disease must be both interesting and useful, for a very large proportion of life-risks die of this malady, and every addition to our knowledge of the laws of transmission and exhibition of its effects must be exceedingly valuable. 12.78 per cent. of all the deaths occurring in Philadelphia during the period named were from this cause; of these, 99.15 were males to every 100 females. Comparatively few (1.78 per cent.) die under 20 years; but the proportion of females among the decedents below this age is very large (4 to 3), as compared with the proportion after the 20th year, when the males have an excess of 9.7 per cent. For the years 1832-3-4, the excess of female decedents amounted to 17.3 per cent. 11 per cent. of all the deaths from whatever cause are persons above 20 years of age, from consumption of the lungs. The deaths from pulmonary consumption in the city of Paris,\* for the ten years ending 1848, numbered 20,723, of which 63.67 were males to every 100 females. Of the 19,409 deaths from pulmonary catarrh in the same city during this decade, 76.65 were males to 100 females. These proportions are for all ages, and we have seen in the deaths occurring in Philadelphia, that the proportion of females was much greater for ages below 20 years than for those above that age, and then the proportion of females in the adult population of Paris is much greater than in Philadelphia, which would, I think, finally give an excess in the proportion of males in the deaths from this affection. In the State of Michigan,† in the year 1870, there were 3,000 deaths from consumption, 86.79 of which were of males to every 100 females. Where an entire State is included in the returns, the greater mortality of women from all causes in country districts, is probably not without its effect on consumptives. In the city of Providence, R. I.,‡ for the 15 years ending 1870, there were 2,957 deaths from pulmonary consumption, or 18.70 per cent. of the total mortality from all specified causes; of these 45.56 per cent. were males, and 54.44 per cent. females, or 83.66 males to 100 females; there being 89.44 males to 100 females in the population.

The following table I have elaborated from the Registrar's (Mr. Chambers's) report:—

Age and percentage of decedents from consumption of the lungs, in Philadelphia, for the 11 years from January 1st, 1861, to December 31st, 1871:—

Average age of all decedents from consumption.....	55.57 years
Average age of all decedents from consumption dying after the 20th year.....	39.41 "

\* M. Trébuchet, in *Annales D'Hygiène Pub.*, etc., v. xlvii., p. 6-12.

† Dr. Baker's compilation of the Statistics of Michigan, 1870, p. 342.

‡ Dr E. M. Snow's Regst. Rept., 1870, p. 46.



Average age of all decedents from consumption dying after the 30th year.....	46.77	"
Average age of all decedents from consumption dying after the 40th year.....	51.73	"
Average age of all decedents from consumption dying after the 50th year.....	58.51	"

The percentage dying at different ages was as follows:—

Under 1 year, 1 to 2, 2 to 5, 5 to 10, 10 to 15, 15 to 20, 20 to 30,	1.73.	1.06.	1.34.	.99.	1.29.	6.90.	30.39.
30 to 40, 40 to 50, 50 to 60, 60 to 70, 70 to 80, 80 to 90, 90 to 100,	24.21.	16.94.	8.95.	5.28.	2.19.	.34.	.019.

In England and Wales, according to Dr. Farr,\* consumption (phthisis) is most fatal to women, the difference being greatest between the ages of 15 and 55 years. For the 7 years ending 1854, 166,741 males and 187,801 females died, or 2.70 males died annually, to every 1,000 living, and 2.92 females, being an excess of .22 for females.

From 0-5 years there was an excess of	.08	for males.
" 5-10 " " " " " "	.08	" females.
" 10-15 " " " " " "	.57	" "
" 15-25 " " " " " "	.72	" "
" 25-35 " " " " " "	.67	" "
" 35-45 " " " " " "	.23	" "
" 45-55 " " " " " "	.70	" males.
" 55-65 " " " " " "	.88	" "
" 65-75 " " " " " "	.74	" "
" 75-85 " " " " " "	.18	" "
" 85-95 " " " " " "	.07	" "
" 95 and upw. " " " " " "	.20	" females.

This table indicates that females are more likely to die of consumption than males, from puberty to the menopause, but after the 45th year, more males succumb to this cause than females; until 95 years is reached, when it is again more fatal among females. For all ages there is an excess of female decedents in the proportion of 1,000 females to 887 males, but it must not be forgotten that there is an excess of females in the population of all ages (1,000 females to 966 males), and of the ages of decedents from this cause the proportion is probably in favor of females, so that of the *adults* dying of this affection, as indicated by the above table, there is a larger proportion of males than females; for the excess of females, among the decedents from the 20th to the 45th year, is more than counterbalanced by the excess of males above the 45th year.

Dr. J. V. C. Smith says that "females in cities are more prone to consumption than those in the country." In the State of New York, 1865, 3,042 males and 2,999 females died of pulmonary consumption, or 16.19 per cent. of all the deaths were from this cause. This mortality is 4 per cent. greater than that of Philadelphia for the last 11 years. In New York State, 1850, 3,257 males and 3,434 females died from this disease, and in 1860, 4,014 males and 4,185 females; for these 3 years the proportion of males to females was as 97 males to 100 females. In 1865, there were 96 males to every 100 females living of all ages in the population of the State.†

Dr. Snow says: "Of the decedents from consumption a large majority of those of American parentage have been females, but until 1868 there were usually more males than females among those of foreign parentage."

In the New England States, according to the census of 1870, of the decedents from consumption 84.58 were males to every 100 females, which is probably not much above the proportionate excess of females in the population.

Some authorities say that "consumption is more likely to be transmitted by a mother than a father." We may find a reason for this in the following:—

The egg from which a male is derived, being for a longer time under the sole influence of the mother (before impregnation), acquires more of her physical constitution and peculiarities, resembles her more, or inherits more of her physical defects and tendencies, and this egg is impregnated by a weaker element on the father's part, than his female issue;—while the egg from which a female is derived is a shorter time under the sole influence of the mother, being impregnated earlier in its course of development; and besides this it requires the highest power of the male element to communicate the impregnating influence to it. Hence we have less hereditary disease *exhibited* in the female, yet she may *transmit* it with greater facility than the male, though it may not have developed in her.\*

An *increasing or high rate of mortality* is accompanied by greater fecundity, larger proportion of male births, and *greater mortality among males than females of all ages*. This rule holds in cities or parts of cities as compared with other cities, but may not hold when cities are compared with country districts. With very rare exceptions the males usually exceed the females in births, from 2 to 6 per cent.; yet in no country, were the influence of emigration and immigration excluded, are the number of males living equal to the number of females, particularly in old and highly "civilized" countries. Throughout the world there are millions more females than males; especially is this true among adults. As there are from 2 to 6 per cent. more males born than females, yet there are at least 6 per cent. more females in the living population,† and as the proportion is steadily increasing it is evident that females are longer-lived than males.

I have been contented to bring together these facts and arrange them with a view of showing the greater longevity of females in general, and in particular in regard to the effects of hereditary disease, which are the great source of loss to life-companies. It is scarcely necessary for me to draw the inferences from these facts and figures, for they are so plain that it is unnecessary; one can easily see, by examining the table, that a woman whose parents died of brain-disease, is a much better risk than her brother, so far as the likelihood of her dying of the same affection is concerned.

2003 WALNUT ST., PHILADELPHIA, May, 1873.

\* Registrar-Gen.'s Rept., 1854.

† Census of State, 1865, compiled by Dr. Franklin B. Hough.



Compar. Longevity  
of Men & Women.

as to the health and eligibility of candidates for insurance is to me perfectly plain, and the object of this communication is to very briefly present for their consideration two propositions, the adoption of which would, I believe, be very great improvements upon the present plan of doing business.

*First:* Let there be appointed a State or district supervisor of medical examiners. Let him be a medical man, acquainted with the profession generally, and let him appoint examiners from considerations of age, experience, character, etc. Such an officer would render valuable services to the company, and would deserve pay for his services. Under such administration, we should not see the examinership given to the first medical acquaintance made in the town by the agent, or to one who has just graduated, when there are many who have served in the capacity for years and made the subject a study. Further, and far more important, the examiner would then never be, as he never should be, the creature of the agent, or in any way dependent upon him.

*Second:* Whether the former plan be followed or not, let the blank for the medical examiner be invariably separate from the application, with directions to mail it direct to the home-office and not allow it to pass through the agent's hands, to be seen by him or by any one else. Generally, in small towns, and sometimes in large cities, the examiner finds it difficult to make an honest report upon an applicant without injuring himself. Frequently he is obliged to resort to some subterfuge to enable him to do his duty honestly by his employer, the company, and by his other employer and neighbor, the applicant. All this would be avoided by the plan suggested, were it followed by the companies generally, and made invariable as to individuals.

The value of these suggestions may not appear as great to others as to myself; I have learned it from an experience extending over many years as examiner for several companies, and I present them in your columns for the consideration of those interested. J. C. R.  
DAYTON, OHIO.

TO THE EDITOR OF THE MEDICAL RECORD.

I AM in receipt of the Special Edition of the MEDICAL RECORD, May 15, 1873, with the notice that the Life Insurance Co., of Hartford, Conn., subscription price and directed the RECORD

facts which came to my notice and bear on this point. An agent for whom I had made several examinations presented one man who, to appearance, was a good subject, but knowing something of his history I declined to examine him, feeling sure I should not pass him, and supposed the matter stopped there; but, instead, the applicant was taken to a neighboring town, passed examination, and received into a company.

The other instance was an applicant whose examination was good, but the family history given by the applicant caused me to send him to the headquarters of the company; he was admitted. Some two or three years after that, this person made another application through an agent to this company, and his examination being good I recommended his insurance, knowing he had been admitted at headquarters on previous application. The company, however, rejected the application with considerable spirit, gave the agent a lecture, telling him that he must pay the examining fee.

I am glad you have added a department of Life Assurance to the RECORD, and think that good will come out of it.

Companies cannot be too particular in taking risks, nor physicians too thorough in examinations, but agents can be too persistent in getting applicants.

Yours truly,

JEROME WILMARTH, M.D.

UPTON, MASS., June 9, 1873.

## THE RELATIONS OF THE LIFE-INSURANCE COMPANIES TO THE MEDICAL PROFESSION.

BY A MEDICAL DIRECTOR.

No one who is conversant with the business of life insurance will deny that the mutual relations between the companies on the one hand, and the medical profession on the other, are at the present time eminently unsatisfactory to both parties, and fraught with danger to the best interests of the community. The executive officers complain that "the medical examination of applicants does not afford that protection against the intrusion of unsound lives which it is designed to effect;" in other words, they consider the medical examination as "the *weak spot* in conducting the business of life insurance." This evil they attribute not so much to a lack of professional skill in the medical examiner as to the "absence, too-frequently observable, of a certain *moral* qualification, not less essential in the exercise of his responsible duties." \*

This is, in brief, the ground of complaint on the part of the companies; and, we regret to add, it rests on a foundation of fact.

On the other hand, the medical examiners complain that the companies do not treat them fairly; that they are quietly allowed to make room for some more lenient physician, the moment the exercise of their duty to the company conflicts with the interests of the agent. They say, furthermore, that their fees are too small in proportion to the responsibility which they are made to assume.

While both sides, then, seem to have just cause for complaint, the question still remains, Who is primarily to blame for this condition of things? Is it because there is a widespread and growing lack of moral responsibility among the members of the medical fraternity, or have the companies enlisted in their service

\* See MEDICAL RECORD of May 15th, 1873; article, "On the Relation of the Medical Examiner to the business of Life Insurance." By the Secretary of a Life-Insurance Company.

Women  
& men



#### MORTALITY OF INSURED FEMALE LIVES.

An actuary of this city informs us that, according to all the tables not based upon the experience of life-insurance companies, female lives are unquestionably the best, except perhaps in the ages over 65; but that in the best-ascertained and most voluminous table, based upon the risks taken by companies, the female risks between the ages of 15 and 49 are the worst. (See  $H^m$  and  $H^f$ , New Actuaries, 1869, page 26, based on 16,604 female lives.) The following is the table referred to:—



static Peculiarities of the Jewish Race," (published in our number of May 15) has received from the Jewish newspapers the favorable criticism which it deserves. The "Hebrew Leader" republishes it entire in four consecutive numbers. We also notice its republication in the "Cincinnati Lancet and Observer."

#### TEMPERANCE AND INTEMPERANCE IN LIFE INSURANCE.

An English Life-Company, that issues life-policies to those who restrict themselves to the use of beverages not more ardent than tea or coffee, has published the re-



*H and H<sup>f</sup>—Mortality per cent. of Male and Female  
Lives compared.*

Ages.	Male. (1)	Female. (2)	Difference.
15 to 19	.47	.86	— .39
20 to 24	.69	.85	— .16
25 to 29	.69	1.18	— .49
30 to 34	.82	1.13	— .31
35 to 39	.95	1.21	— .26
40 to 44	1.07	1.28	— .21
45 to 49	1.36	1.39	— .03
50 to 54	1.74	1.57	+ .17
55 to 59	2.40	2.02	+ .38
60 to 64	3.48	2.86	+ .62
65 to 69	5.02	4.37	+ .65
70 to 74	7.33	6.84	+ .49
75 to 79	11.00	10.66	+ .34
80 to 84	16.52	12.51	+ 4.01
85 to 89	22.35	22.82	— .47
90 to 94	32.73	22.68	+ 10.05
95 to 99	54.55	33.33	+ 21.22

It will be noticed in this table that the excess of deaths among the female lives occurs between puberty and the menopause, and that it reaches its highest point between the ages of 25 and 30. This circumstance would suggest the idea that this higher mortality during this particular period of life is probably attributable to parturition, or to diseases of the female organs of generation. We have never seen a tabulated statement showing the actual experience of our companies in this particular, and so cannot say whether the facts corroborate this idea or point to other diseases as the cause.



general way an assurance of mutual support and co-operation in the performance of those duties, but also the consideration of subjects important to the companies we individually represent, and to whose interests we feel ourselves pledged. We trust that the views which we express in this letter will meet with your approval, and that you will be induced to give us your co-operation.

We believe the examination of applicants for insurance to be a subject of the utmost importance; that the due performance of his duties in making such examinations should call forth the highest ability and the most conscientious action on the part of the Examiner; and that upon such performance of duty by the corps of Examiners depends the very life of a company. We are confident we subserve the best interests of the companies we represent in recommending a judicious selection of risks,—the acceptance of a moderate number of unexceptionable rather than of a large number of doubtful risks. To this end we ask that the companies will aid us by appointing none but men standing honorably in the profession, of undoubted ability and unimpeachable integrity.

From our knowledge of the fact that in some cases applications are presented to the home-offices by persons other than the general agents, and that examinations for such risks are occasionally made by irresponsible physicians, we beg respectfully to suggest that *all* applications made in Boston and vicinity be presented for approval to the Examiners at the general agencies; it being understood that all examinations, and all business relating to the medical department, shall be transacted through the regular Examiners of the companies, unless for manifest reasons to the contrary.

We request that the sanction of the companies be given to an arrangement by which Medical Examiners shall communicate to the members of the Associa-



—The death of Thurlow Weed, at the age of 85, recalled these facts: That Clay reached the age of 75, Jackson 78, Calhoun 68, Webster 70, John Quincy Adams 81, Buchanan 78, Van Buren 81, Taylor 64, Cass 82, Marcy and Everett 71, Benton 76. Of the older generation of American Statesmen, John Adams reached the age of 91, Jefferson 83 (both he and the elder Adams dying on the Fourth of July, 1826), Burr 81, Monroe 73, Jay 84, and Patrick Henry 63.



days," "Waterton's Wanderings in South  
America," Irving's "Old Christmas" (illus-  
trated by Caldecott), "Irving's Bracebridge  
Hall" (illustrated by Caldecott).

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## Health of Philadelphia and Other Large Cities.

An interesting comparison of the sanitary state of many of the great cities of the world may be made by using the data contained in the weekly and quarterly reports of the Registrar-General of England. From these reports it appears that the mortality of Philadelphia is less, in proportion to population, than that of any of the prominent cities designated.

According to the quarterly records for the year 1873, the annual death-rate per thousand of population, in the cities named, was as follows:

	1st Qr.	2d Qr.	3d Qr.	4th Qr.
Cities.	No. deaths. Rate per 1,000 living.	No. deaths. Rate per 1,000 living.	No. deaths. Rate per 1,000 living.	No. deaths. Rate per 1,000 living.
London.....	18,970 22.7	16,690 20	18,234 21.8	20,993 25.0
Paris.....	11,088 24.4	10,555 23	10,589 23.0	10,269 22.5
Brussels.....	1,218 26.5	1,144 25	1,190 25.8	1,025 22.0
Berlin.....	5,745 29.9	6,699 33	8,627 41.8	4,914 25.8
Vienna.....	5,335 34.4	4,804 30	7,004 43.6	3,668 22.8
Rome.....	1,963 42.2	1,724 23	1,827 30.0	1,648 27.0
Glosterce.....	1,442 31.6	.....	1,270 30.5	.....
Turin.....	1,615 30.4	1,574 29	1,276 24.1	1,112 22.8
Calcutta.....	3,643 32.1	2,606 23	2,446 21.9	2,687 26.0
Bombay.....	4,418 27.6	3,906 24	3,571 22.8	3,592 22.2
Madras.....	3,762 37.6	3,684 37	3,485 35.2	.....
New York.....	7,974 30.1	6,593 26	8,954 35.9	5,664 29.4
Philadelphia.....	4,118 22.1	3,932 21	4,436 23.7	3,193 17.0
Amsterdam.....	.....	1,725 25	1,604 23.2	1,480 23.0
The Hague.....	.....	640 28	602 26.0	492 22.0
Copenhagen.....	.....	.....	1,286 25.8	.....
Philadelphia, local records.....	4,309 22.9	3,451 18.4	4,435 23.6	3,029 16.1
* * *	* * *	* * *	* * *	* * *

"A number of advantages combine to place Philadelphia, in point of healthiness, foremost in the group of the large cities of the world. Among these advantages may be mentioned: abundant supply of pure water; a location, free from malarial influences, and especially well adapted for good drainage; an abundance of cheap and wholesome food (the Registrar-General of England remarks upon the intimate relations in which the prices of the principal articles of food stand to the health and well-being of the population, as proved by returns of births, deaths and marriages); the temperate climate: and the great facilities for recreation, furnished by one of the largest public parks in the world.

"But the causes which we conceive to have the most weight in determining the comparatively low death-rate of this city find the explanation in the abundant supply of healthy homes adapted to the wants and comforts of the laboring class, and the poorer inhabitants of the city. Philadelphia has been rightfully called "The City of Homes." "At the beginning of the year 1873 there were 124,302 dwelling-houses or residences of families, some of them being also used in part for store or manufacturing purposes. The dwelling-houses exceed in number those in any other city in the United States. There were 60,258 more than in New York city in 1870, when the relative number of dwelling-houses was, New York, 64,044; Philadelphia, 112,366. There were 78,468 more than in Brooklyn in 1870, and 84,627 more than in St. Louis, 83,952 more than in Baltimore, 79,682 more than in Chicago, 94,779 more than in Boston, and 99,052 more than in Cincinnati in the same year. There were more than in New York and Brooklyn combined in that year. There were only 16 less than the whole combined number of dwelling-houses in Baltimore, St. Louis, Boston and Louisville in 1870."

"The number of persons to each dwelling in Philadelphia, in 1870, was on an average 5.99; and in 1873, estimating the population at 750,000, the average proportion was 6.04 persons to each dwelling. The city is embraced within an area of 120 square miles, and possesses 900 miles of streets and roads, of which number over 500 miles are paved. In no large city of the world is the population less concentrated, and the masses better provided with comfortable and healthy homes.

"Though the population is spread over so extensive an area, all points of the city are readily accessible by means of the perfect system of street railways that girdle it and intersect it in all directions. Tenement houses, such as are the abomination of most large cities, are scarcely to be found, and this source of increase of mortality is therefore absent.

"In attempting to explain the surpassing healthiness of Philadelphia, when compared with the great cities of the world, too much stress cannot be placed upon the absence of overcrowding, and the existence of abundant facilities for properly accommodating the laboring classes in separate and comfortable homes."

The following table furnishes the population, number of deaths, and the deaths to one thousand persons living, in most of the principal cities of the United States, for the year 1873:

Cities.	Estimated Population.	Deaths.	Rate per 1,000 living.
New York.....	1,040,000	29,084	27.96
Philadelphia...	750,000	15,224	20.29
St. Louis.....	450,000	8,551	19.00
Brooklyn.....	435,314	10,968	25.19
Baltimore.....	305,000	7,614	24.96
New Orleans...	278,060	7,505	37.05
Boston.....	276,579	7,869	28.45
Cincinnati.....	246,923	5,641	22.84
Richmond Va.	60,705	2,037	33.39



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\$100,000 United States Six Per Cent. Loan, 1897.....	\$108,750
200,000 State of Pennsylvania Six Per Cent. Loans.....	212,360 00
\$25,000 City of Philadelphia Six Per Cent. Loans (exempt from tax)	327,325 00
164,000 State of New Jersey Six Per Cent. Loans.....	167,280 00
20,000 Pennsylvania R. R. First Mortgage Six Per Cent. Bonds.....	19,400 00
25,000 Pennsylvania R. R. Second Mortgage Six Per Cent. Bonds.....	23,750 00
25,000 Western Penna. R. R. Mortgage (Penna. R. R. guarantee).....	20,000 00
20,000 State of Tennessee Five Per Cent. Loan.....	20,700 00
7,000 State of Tennessee Six Per Cent. Loan.....	4,830 00
19,000 Pennsylvania Railroad Company, (380 Shares Stock).....	0
5,750 North Pennsylvania Railroad Company (115 Shares Stock).....	5,405 00
10,000 Philadelphia and Southern Mail Steamship Company (80 Shares Stock).....	4,000 00
40,000 American Steamship Company Six Per Cent. Bonds.....	28,000 00
236,950 Loans on Bond and Mortgage, first liens on City Properties.....	236,950 00

\$1,207,700 Par.	Market Value, \$1,195,707
Real Estate.....	70,000
Bills Receivable for Insurances made.....	208,700
Balances due at Agencies, Premiums on Marine Policies, Accrued Interest and other debts due the Company.....	80,135
Stock and Scrip, &c., of sundry Corporations, \$10,673. Estimated value.....	6,105 00
Cash.....	89,261 00

\$1,649,909 80

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JACOB FOURNHIS, who was probably the oldest man in the world, died recently at Kansas City. He was about 138 years old, and remembered, ~~distinctly~~, the taking of Quebec by Wolfe, in 1759. In 1814, at the time of the occupation of New Orleans by General Jackson, Fournais was not allowed to enlist because he was too old. He followed the occupation of a hunter for fifty years, and retired about thirty years ago from active work.



its center are the Morris and Essex, 61 miles, the Boonton branch, 35 miles, and other branches of 15 miles. The main line of the Delaware, Lackawanna and Western, extends from Hampton Junction on the Central road, passing through the Delaware Water Gap, Scranton, &c., to Binghamton, New York, one hundred and forty-six miles, its chief traffic being coal south from Scranton.

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## A LAYMAN'S VIEW OF THE QUESTION.

(From "The Chronicle.")

No subject connected with life insurance is at present receiving more, or more thoughtful attention, than that of medical examiners, their qualifications, their relation to the companies, the manner of their appointment, and the measure of their compensation. This will be one of the principal topics of discussion at the approaching meeting of the Chamber of Life Insurance, it having already been referred to a competent committee. And it is a subject of transcendent importance to every life insurance company in the land. It has been incompetent medical examiners quite as much as malarious influences that have made the southern business of our life companies unprofitable. And generally, because of incompetency or carelessness on the part of medical advisers, the mortality among insured lives has been of late frightfully increased.

Applicants for insurance are the food upon which life insurance companies subsist—the pabulum of which their future safety, efficiency, and usefulness are built up and perfected, just as the food which man eats gives him strength, repairs the waste attendant upon the performance of the natural functions, and so prolongs his life.

No less care should be used in the selection of the food required in the one case than in the other. Nature's careful guardians in the case of the human body are the organs of special sense. A like supervision over the safety of a life insurance company should be the office of a skilled medical examiner. He it is alone who can decide whether the food presented and ingested will build up into healthy, vigorous bodies, or degenerate into a sapless and decrepid corps of invalids. He alone passes judgment upon its hurtful or beneficial qualities, and thus wields an influence potent for good or evil, not only upon the companies which he may represent, but upon the community at large; for life insurance is a business from which man, in any position in life, may derive benefit.

Every risk assumed upon a recommendation not made by skilled judgment, and based upon strict and conscientious examination, is a fraud upon each and every policy-holder, and another cause of want of confidence on the part of the insuring public.

It needs no acute reasoning to prove that a company which receives and accepts unworthy risks is not a safe company, and outsiders, as they are termed, are by all odds the first to discover such a fault, and seeing it, to avoid involving their fortunes with those of the recklessly managed company which commits it.

Surely no company can be blind enough to its own interest to fail to realize how greatly it is dependent upon the clear judgment of its corps of medical examiners, neither should any medical gentleman assume the duties of this office without conscientious self-inquiry into his own fitness to fill the position, and a clear understanding of the weight of responsibility borne by his shoulders, and the manifold interests affected by the faithful or unfaithful discharge of his duties.

Not only is it work of mere professional acumen, but it is a work which will add more to his own credit, and to the honor of his profession, than any other which he can be called upon to perform; for here it is that the medical examiner should gather the data based upon which the benefits of the good work of which he is the guardian may be disseminated broadcast, and the results of his labor redound to the welfare of mankind in future years.

Henry Jenkins  
169 years

(1873)



*Account of Henry Jenkins*  
*do given*

by Mrs. Saville, a lady of position, who resided at Bolton, in Yorkshire, where Henry Jenkins also lived. "When I came to Bolton," says she, "I was told several particulars of the great age of Henry Jenkins; but I believed little of the story for many years." One day, however, he happened to call at her house, to ask for some assistance, when she "desired him to tell her truly how old he was. He paused a little, and then said that to the best of his knowledge he was 162 or 163; and I asked what king he remembered. He said Henry VIII. I inquired what public event he could longest remember. He said Flodden Field. I asked whether the king was there. He said, no; he was in France, and the Earl of Surrey was general. I asked him how old he might have been then. He said, 'I believe I might have been between 10 and 12; for,' added he, 'I was sent to Northallerton with a horse-load of arrows, but they sent a bigger boy from thence to the army with them.' All this agreed with the history of that time; for bows and arrows were then used, the Earl was named general, and King Henry VIII. was then at Tournay. It is observable that Jenkins could neither read nor write. There were several old men in the same parish, some reputed to be nearly 100 years old, but they all said that Jenkins was an elderly man ever since they knew him. He told me, too, that he was butler to the Lord Conyers, and remembered the Abbot of Fountains Abbey very well, before the dissolution of the monasteries."

Henry Jenkins died on December 8, 1670, at Ellerton-on-Swale, in Yorkshire. The battle at Flodden Field was fought September 9, 1513, so that, assuming he was 12 years old at that time, he lived to the "amazing age of 169" (as was stated on a monument subsequently erected to his memory by a subscription amongst the inhabitants of Bolton), and thus attained to 16 years' longer existence than old Parr.

I need not discuss the question whether he really reached the great age of 169, or whether he died at a few years under that period. It is sufficient for the purpose of this Note that he lived longer than any other person whose case has been authentically put on record since the commencement of the Christian era.

Of Henry Jenkins's descendants, the particulars are, as might be expected, from their humble position, only slight; but there is no room for doubt upon one point, viz.: that they were all long-livers. David Jenkins tells me that his grandfather was a very old man at the time of his death; and that his father died at the age of 93, from the effects of a rupture through overstraining himself in his work as a chairmaker. Had it not been for this accident he would probably have become a centenarian; and we see that, despite of poor David Jenkins having to contend with the drawbacks of bitter poverty—rendered none the less poignant by the fact that, years ago, he succeeded in elevating himself into a position of comfort and independence as a master-tradesman, which position he subsequently lost through a series of unavoidable misfortunes—he has attained the great age of 93, in the full possession of his faculties, and free use of his limbs, with every prospect of living many years longer, if he should not be crushed under the heavy weight of adversity.

Surely, in the history of this family, there is enough to show that Dr. Allen was not mistaken in his views upon the importance of hereditariness in connection with the subject of longevity.

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THE Chamber of Life Insurance will hold its next meeting in this city during the coming week. It has work before it of importance to medical men.



measure must be simple, and applicable to all countries. Now, the measure that is in universal use is the rate of mortality: a unit of life loses a certain fractional part by death every moment, and the amount of loss in a unit of time expresses the rate of mortality. The unit of time is always a year, and the rate of mortality is found by dividing the deaths by the mean numbers living multiplied into the time. The rate varies from '020 to '040 in England—that is, in one place the deaths are 20, in another 40 to 1,000 living. Indeed, the range is still greater without a correction to which I will shortly advert.

In the normal community constituted of persons of all ages by an equal number of annual births, there is a fixed mathematical relation between the rate of mortality and the duration of life. Thus, if the average rate of mortality in two cities is 2 per cent., then the mean duration of the lives of the inhabitants is 50 years in the one city and 25 years in the other. Therefore in saying that rate of mortality measures, it is conversely affirmed that length of days measures the health of nations. As the population fluctuates, certain corrections are necessary; the rates of mortality are determined at various ages, and from these the probabilities of living year by year are calculated and set forth in a life table that determines the path every generation passes over from rising to setting.

The mortality is really a life measure, for the people living to a given sum of births increases in exact proportion as the duration of life increases.

If it is only an indirect measure of some of the elements of health, according to our larger definition it expresses in masses the sickness, measures very accurately the influence of a variety of causes on life, and is a safe guide in practice.

Public health now engages the attention of every civilized state; so we can pass in review the principal populations of Europe, and from the researches of their own statisticians learn by this measure their comparative health.

I take the population in the lowest stage of health first, beginning with Russia. That empire is emerging from barbarism; and its condition enables us to conceive the state of the population of Europe in the dark ages. The people of various races between the Caucasus and the Arctic Ocean,

the Oder and the Ural Mountains, die at all ages, from birth up to 140 years it is said, but their mean lifetime is only 25 years.<sup>1</sup> The marriage rate is 10, the birth rate 45, the death rate 36 (per 1,000 is always understood unless another scale is mentioned). Thus birth, marriage, death, succeed each other rapidly among the sixty millions of people diffused over nearly two million square miles of steppes, forests, farms, and river-side pastures. In Archangel, where the greatest extremes of cold are experienced, the mortality is nearly the same as it is in England; in Esthonia and Courland, on the Baltic, the rate is low; so it is in Finland; while about the Caucasus, the Black Sea, and the Caspian, it ranges from 40 to 52.<sup>2</sup> Whenever the mortality is excessively high in any place its causes can now almost always be discovered; they are familiar enough to us in England, but as they take different forms in different countries, and are the subjects of inquiry in Russia itself, it is not my intention to dwell on them. Russia has emancipated her serfs. Russians have taken a conspicuous part in the international statistical congresses; they are frequently inquiring into what is doing in England; and, if I mistake not, English engineers are now engaged in the water supply of one of their capitals.

Italy, extending from the Alps across the middle of the Mediterranean, offers a strong contrast to Russia; it is divided by the Apennines, breathes the air of the sea, is not frozen by hard winters, is the home of the arts, and inherits the renown of the empire of the world. But the Italian people suffer much; few live to their natural term; the death rate is 30.<sup>3</sup> I speak now of the new kingdom of Italy. The death rate in Piedmont and Lombardy, and in the islands of Sicily and Sardinia, is 29; south of the Po, in Parma, 35; Modena, 31; Romagna and the Marches, 31; Tuscany, 33; Naples, 35; Umbria is the healthiest province of Italy, rate 27; and Rome, thanks to her aqueducts, is perhaps the healthiest city in Italy. Venetia, under the Austrians, was in health on a par with Tuscany, 33. It is a peculiarity of Italy that the population of the country is as un-

<sup>1</sup> Reg. Gen. 6th Report, p. 327.

<sup>2</sup> Ibid., p. 330.

<sup>3</sup> Three years, 1862-4. Reg. Gen. 27th Report, p. xxxviii. The mortality of provinces is for the year 1862.



# THE MEDICAL NEWS AND LIBRARY.

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## CONTENTS.

PUBLIC HYGIENE.		Presence of Marine Salt in the Maritime Atmosphere . . . . .	224
Address on Public Health . . . . .	213	Hydatid in the Brain . . . . .	225
MEDICAL NEWS.		Poisonous Nature of Crude Paraffin Oil . . . . .	225
<i>Domestic Intelligence.</i> —Health of Philadelphia . . . . .	222	Cholera in London . . . . .	226
New Hampshire Medical Institution, Dartmouth College, Hanover . . . . .	222	Paris International Medical Congress . . . . .	226
University of Michigan . . . . .	222	Paris Faculty of Medicine . . . . .	226
Toland Medical College . . . . .	222	Medical Students in London . . . . .	227
Philadelphia College of Pharmacy . . . . .	222	Mortality Returns in Paris for 1865 . . . . .	227
Obituary Record . . . . .	223	The Boundou Poison . . . . .	227
<i>Foreign Intelligence.</i> —Influence of Sleep on the Appetite and Reparative Powers . . . . .	223	A Novel Infant's Nursery . . . . .	228
Hygienic Precautions against Cholera . . . . .	224	Glorious War . . . . .	228
Curious Physical and Allotropic Properties of Acetate of Soda . . . . .	224	Prizes of the Royal College of Surgeons of England . . . . .	228
		Sir Charles Hastings' Fund . . . . .	229
		A Live Gorilla . . . . .	229
		The Head-Quarters of Drunkenness . . . . .	229
		M. Jobert de Lamballe . . . . .	229
		Obituary Record . . . . .	229

JONES ON FUNCTIONAL NERVOUS DISORDERS.

8 PAGES.

### PUBLIC HYGIENE.

*Address on Public Health*, delivered before the National Association for the promotion of Social Science at its Tenth Annual Meeting, held at Manchester in 1866. By W. FARR, M. D., F. R. S.—Public health is the subject of inquiry in your third department. Every life here, the life of every community, is surrounded by dangers, which it is the business of science to study and of art to avert. These dangers are of various kinds, and spring from various sources. Enemies abroad and criminals at home are dangers to which every government is alive. There are other dangers not less formidable. Famine now ravaging India, cholera in Europe, early deaths, sufferings in hospitals, fevers in homes, are instances of a class of dangers that we seek to investigate, avert, and disarm.

Health implies more than existence; it implies energy in strength and in intellect.

In Anglo-Saxon one word—*hael*—designated healthy man, hale man, brave man, hero; and *hælend* was healer, saviour. These simple but noble conceptions it is our business to bear in mind. Development, as well as conservation of life, is the aim of public hygiene—the name by which our science is known in the Continental schools. Private hygiene deals with individuals, public hygiene with communities; but, inasmuch as nations are aggregates of men, it is evident that the division into two parts is only made for the convenience of study and of administration. Some things a man can do himself, others can only be done by town councils and imperial governments. It will be an advantage to confine our discussions to the field of public health.

As political economy rests upon the idea of value, so our science rests upon the idea of health, and it is as important to us to find a measure of health, as it is to the economist to find a measure of value. Tha

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far as official documents go, the death rate of Ireland is 17; and, after every allowance for defects in registration, which has only been recently established, I do not think the death rate of Ireland can be set higher than that of Scotland.

From the English Life table we learn that the mean lifetime of the nation is 41 years (40.85),<sup>1</sup> and this implies a corrected mortality of 24 (exactly of 24.47) annually, whereas by the ordinary method the mortality is 22 (or 22.45). The difference arises from the increase which throws into the population a mass of young persons at ages when the mortality is below the average. The average age of the dying is reduced from the same cause—it is 29.4 years. Similar corrections of the mortality are required, and will ultimately be made, in other countries.

The mean age of the population by the Life Table is 32 years; the mean age of the enumerated population in 1861 was 26½,<sup>2</sup> the difference of 5.5 years arises from the same cause. If a normally constituted population has lived 32 years, it will live 32 years under the same law of mortality;<sup>3</sup> but in England the age of the people is now 26.5 years; and they will live 35.6 years on an average. As they are younger they have an ampler prospect of life before them than a stationary population.

You are aware that more boys are born alive than girls, and the boys dying in greater numbers, this provision of nature brings the sexes nearly to an equality of numbers at the age of marriage. Thus, of 1,000<sup>4</sup> children born in England, 512 are boys, 488 girls; 334 men, 329 women, live to the age of 20. The excess of boys is reduced from 24 to 5; and if there was no emigration and foreign service, the men of the age 20–40 would exceed the women in number. An unchanging 1,000,000 of annual births will produce, according to the law of vitality in England, a population of 41,389,940, consisting of 20,426,138 males, 20,432,802 females, large numbers differing quite inconsiderably.

The births registered in the United Kingdom in 1865, exclusive of the islands in the

British seas, amounted to 1,006,223, and this is below the actual number, as all the births are not registered in Ireland or England. The population of the United Kingdom, including the islands, is now estimated at 14,775,810 males, and 15,553,397 females. England differs from the other countries of Europe in this respect; it has 250,356 men in the Army, Navy, and merchant service abroad, on the seas, and in English possessions. This leaves 14,525,454 males at home, against 15,553,397 females.

The females exceed the males in the United Kingdom by 1,027,943. After deducting the men abroad having English homes, the number is reduced to 777,587 women. The proportionate number is greatest in Scotland, least in Ireland.

Nevertheless, if our calculation is correct, the men must be somewhere in existence; and, in fact, in America and in Australasia alone at the last census, the males found exceeded the females by nearly a million (972,530). Allowing for the share of other nations in the surplus, there can be no difficulty in identifying the men of which the 777,587 women at home complete the calculated couples. The men are in Newfoundland, New Brunswick, Canada, Australasia, and the United States, whither the women have hitherto hesitated to sail from home across the ocean; but with constant magnetic communication, commercial intercourse, and the intimate union of the people on both sides of the seas, the equilibrium of the sexes cannot fail, in the end, to be re-established.

It is gratifying to find that the health of the English race on the other side of the seas, so far as we can judge from imperfect documents, is not worse than it is in England; and that those rising communities are eager to adopt all the sanitary improvements of Europe. In some respects they have gone ahead of Europe; I may refer to the magnificent aqueduct pouring the fresh streams of a mountain river into New York since the year 1842, when Paris and London were drinking polluted waters from the Seine and the Thames.

A word on the growth of population in England, which is unquestionably one of the weightiest of all our hygienic problems. The population of the United Kingdom was 16,302,410 in 1801; it is now 30,329,207.

<sup>1</sup> "English Life Table," p. 22, based on returns of population, 1841 and 1851; and 6,470,720 deaths in 17 years, 1838–54.

<sup>2</sup> "Report on Census," 1861, p. 110.

<sup>3</sup> See this curious law demonstrated in "English Life Table," Introduction, p. xxxii.

<sup>4</sup> See "Life Table," p. 24.

<sup>1</sup> Census Report, 1861, p. 5.



healthy as that of the towns. This low standard of health is the fruit of the former state of things as the new Government has had little time to do more than bring the evils to light, which luxuriated under small paralyzing despotisms. As the science of Italy reveals the evils and their causes, the people will find remedies; and among the first will probably be the restoration of the great drainage works and the magnificent aqueducts of their ancestors. Improved health will increase the military power of Italy.

East of Italy is Greece, which holds only a fraction of the Greeks, about whom little can be said; and Turkey, Syria, Egypt, North Africa. All known about these fine regions of the world is that they are desolated by diseases, are unhealthier than Russia or Italy, and are nurseries of the plague that subjects Europe to the vexatious oppression of quarantine.

Spain, lying west of Italy, between the Mediterranean and the Atlantic, mountainous, and divided by deep cut rivers, was perhaps, when she colonized South America, the healthiest country of Europe. The death rate of Spain is now 28.<sup>1</sup>

Between Italy and Russia, on the Danube, extending from the Carpathians to the Adriatic, lies the Austrian empire, full of natural resources and pervaded to a considerable extent by the industry and science of Germany; yet the death rate of Austria is high; it is 30.<sup>2</sup> The mortality of Prussia is not quite so high; it is 29; in Bavaria, on the Upper Danube, it is 29; in Saxony, on the Elbe, 29. At such rates 72 millions of Germans and their associated races die. In none of these countries do the people live on an average 30 years.

We now enter a healthier region of Europe, of which England is the centre; where the people live, on an average, 35, 40, or 50 years, and where a fuller life is enjoyed. Take Norway, for example, with its Udal proprietors along fiords and streams; there the mean lifetime of the people is full 50 years. The death rate is 17; the birth rate is 34. They are, as the old sagas teach us, at home on the ocean, and emigrate freely. In Sweden as well as Denmark the mortality rises to 22; and the mean lifetime of the Scandinavians is about 44 years.

Sweden I may remark, is famous in our science for furnishing Dr. Price with the data from which the first national life table was constructed. In Hanover the death rate is 23; and in Holland, on its canals and river deltas, where the greatest natural sanitary difficulties are found, the mortality is 26,<sup>1</sup> the mean lifetime is 35. In Belgium other difficulties have sprung up; the population is the densest in Europe, thanks to its industry; but the death rate little exceeds 22. If we ascend the Rhine to Switzerland, we there find several healthier cantons.<sup>2</sup>

In France, that varied and beautiful land lying between England and Italy, Germany and Spain, the death rate was 23; in the last year or two it has fallen to 22, as low as that of England.

No variation in the health of the states of Europe is the result of chance; it is the direct result of the physical and political conditions in which nations live. This is so well understood that the people of every country are associated with you in these inquiries, and are watching the progress of the great question of public health in England. Yet its vital importance is nowhere fully recognized; its influence in the history of mankind is lost sight of in the din of war, and in the terrors of revolution. With what just eloquence have Burke and the historians of all nations denounced the furious executions of Paris. But in Germany, including districts under paternal well intentioned sovereigns, some 300,000 men, women, and children are killed every year by diseases, in excess of the numbers dying of the same diseases in France.<sup>3</sup> Under the indolent princes of Italy, the annual life loss in excess exceeded 150,000 lives annually. Not to save in some circumstances is to destroy. Can we wonder, then, at the feverish uneasiness of those great populations, whose instincts have led them at last to coalesce in powerful states?

I now ask you to consider the sanitary state of the United Kingdom. The rate of mortality is 22. The rate is nearly the same in Scotland, England, and Wales. But how fares it with Ireland? Well, as

<sup>1</sup> Sweden, 1841-55, males, 41.28; females, 45.60. Holland, 1850-9, males, 34.12; females, 36.43. Berg and Baumhang. See paper by Hendrick, F. Stat. Soc., vol. xxvi p. 423.

<sup>2</sup> 1857-64.

<sup>3</sup> The mortality in France 1853-62 was at the rate of 23.82; Prussia 1851-60, 29.00; Austria 1857-62, 30.38; Italy, 1862, 31.28.

<sup>1</sup> Four years, 1861-4.

<sup>2</sup> Eight years, 1857-64.



siderately. At the same ratio of increase, which we have maintained on an average from our first National census, in 1790, until that of 1860, we should in 1900 have a population of 163,203,415, and why may we not continue that ratio far beyond that period? Our abundant room, our broad National homestead, is our ample resource.

Were our territory as limited as are the British Isles, very certainly our population could not expand as stated. Instead of receiving the foreign born as now, we should be compelled to send part of the native born away. But such is not our condition. We have 2,963,000 square miles. Europe has 3,800,000, with a population averaging  $73\frac{1}{2}$  persons to the square mile. Why may not our country at some time average as many? Is it less fertile? Has it more waste surface by mountains, rivers, lakes, deserts or other causes? Is it inferior to Europe in any natural advantage? If then we are at some time to be as prosperous as Europe, how soon? As to when this may be we can judge by the past and the present. As to when it will be, if ever, depends much on whether we maintain the Union.

Several of our States are above the average of Europe,  $73\frac{1}{2}$  to the square mile. Massachusetts has 157, Rhode Island 133, Connecticut 99, New York and New Jersey each 80. Also the two other great States of Pennsylvania and Ohio are not far below, the former having 63 and the latter 59.

The States already above the European average, except New York, have increased in as rapid a ratio since passing that point as ever before, while no one of them is equal to some other parts of our country in natural capacity for sustaining a dense population. Taking the ratio in the aggregate, and we find the population and ratio of increase for the several decennial periods to be as follows:

1790—	372,827.			
1800—	5,205,937;	35.02	per cent.	of increase.
1810—	7,239,814;	36.45	per cent.	ratio of increase.
1820—	9,639,131;	33.31	per cent.	" "
1830—	12,866,020;	33.49	" "	" "
1840—	17,969,453;	32.67	" "	" "
1850—	23,131,876;	35.87	" "	" "
1860—	31,443,790;	35.58	" "	" "

This shows an average decennial increase of 34.60 per cent. in population through the seventy years from our first to our last census yet taken.

It is seen that the ratio of increase at no one of the seven periods is either 2 per cent. below, or 2 per cent. above the average, thus showing how inflexible and consequently how reliable the laws of increase in our case is.

Assuming that it will continue, it gives the following results:

1870, 42,393,341; 1880, 56,967,216; 1890, 76,677,391; 1900, 103,278,415; 1910, 138,918,526; 1920, 186,984,335; 1930, 251,630,914.

These figures show that our country may be as populous as Europe. Now at some point between 1920 and 1930, say about 1925, our territory at  $73\frac{1}{2}$  persons to the square mile being of the capacity to contain 217,136,000, and we will reach this too, if we do not ourselves relinquish the chances by the folly and evils of disunion, or by long and exhausting wars springing from the only great national discord among us.

While it cannot be foreseen

the example of several

completely for

and



# MARINE BULLETIN.

PORT OF PHILADELPHIA—DEC. 2.

~~See~~ See Marine Bulletin on Third Page.

## ARRIVED THIS DAY.

Steamship Norman, Baker, 48 hours from Boston, with mdse and passengers to Henry Winsor & Co. 1st inst. 10 miles SW of Cape May, saw a schooner, bottom up.

Brig San Antonia, Snow, 11 days from New Orleans, with sugar and molasses to Bishop, Simons & Co.

Schr Milton, Keen, 5 days from Newbern, NC. in ballast to Captain

Schr Garnet, Quillan, 2 days from St. Martin's, Md. with corn to Jas L Bewley & Co.

## LEAVED THIS DAY.

Ship Orion, Whitney, San Francisco, Workman & Co.

Brig E M Strong, Strong, Cienfuegos, Madeira & Cabada.

Schr Westover, Elibuiby, Boston, Twells & Co.

Schr Clara, Crowell, Boston, Noble, Caldwell & Co.

## Correspondence of the Philadelphia Exchange.

LEWES, DEL., Dec. 1.

The U S sloop of war Dale, for Key West; barks Ann Elizabeth, for Goree, WCA; Mahlon Williamson, for Key West, and Oak, for Boston; brigs Thos Walter, for Martinique; Delaware, for London, and Stephen Duncan, for Cardenas, went to sea yesterday: Wind SW.

Yours, &c.

AARON MARSHALL.

## Correspondence of the Phila. Evening Bulletin.

READING, Nov. 30.

The following boats from the Union Canal passed into the Schuylkill Canal to-day, bound to Philadelphia, laden and consigned as follows:

Saratoga, grain to A G Cattell & Co; A B Sherk, do to Captain; Commerce, do to Thornton Barnes; Caroline, do to Mr Wetherill; Julia, bit coal to Wm McIlvaine & Son; J W Woomer, lumber to Norcross & Sheets.

F.

## MEMORANDA.

Steamship Saxon, Matthews, hence at Boston yesterday.

Steamship Huron, Matthews, hence at Boston yesterday.

Ship Pacific, Benson, cleared at New York yesterday for New Orleans.

Brig Orozimbo, Tracy, hence for Boston, at New York yesterday.

Brig C H Frost, Hiorth, hence, was dischg at Barbados 8th ult.

Brig Umpire, Perry, hence at Boston yesterday.

Brig Jas Carey Coale, Linden, at Bahia 24th Oct. from Baltimore, via Pernambuco.

Brig John Barnard, Jamieson, cleared at Eastport 24th ult. for this port.

Brig Carter, Gilchrist, hence for Portland.

Pearson; Dwight, Davis,

at Boston yesterday.

at Portsmouth 28th



**Facts and Figures Concerning the Present Ravages by Small-Pox.**

[From the London Times, Jan. 13.]

Dr. Cortis, a member of the Metropolitan Sick Asylum Board, stated at the Newington vestry on Wednesday night, that the small-pox epidemic now raging in London was, perhaps, one of the most virulent which had existed within the memory of any man living. Out of 189 deaths occurring from this disease during the last fortnight, 110 had occurred during the past week. There were at present about 700 pauper patients in London suffering from small-pox, but provision had been made in the hospitals under the care of the Metropolitan Sick Asylum Board for only 500. It was expected that by the end of the present month there would be accommodation for at least 1,500 patients. In support of vaccination, Dr. Cortis stated that out of 200 patients admitted into the hospitals, one-third of the deaths occurred among persons who had not been vaccinated, while among those who had been vaccinated only one in twenty-four succumbed to the disease, and they were chiefly among people advanced in life, and had partly lost the protecting effects of vaccination given them in early life. Nurses and medical officers, acting in the most crowded wards, scarcely ever fall victims to small-pox, owing to the fact that all are obliged to be re-vaccinated before commencing their duties. Dr. Cortis calculated that the present epidemic would cost the rate-payers of the metropolis, through the Asylum Board alone, no less than £20,000, a portion of which might have been saved had the Privy Council put into operation the act of Parliament in giving the Asylum Board power to enforce vaccination and re-vaccination. Yesterday, at the Marylebone Vestry, Rev. Prof. Marks asked the Medical Officer of Health what steps had been taken by him in respect of providing accommodation for small-pox cases in the parish. Dr. Whitmore replied that he had fitted up the Iron Hospital at the parish stone-yard for the reception of patients, and five cases had been received from Marylebone Workhouse, the small-pox and temporary hospitals being full. There were ten beds at the Iron Hospital, but thirty patients could be provided for, and he wished to know whether the Vestry would sanction his immediately fitting up the hospital for the reception of that number. Mr. Tavener said he would move with great pleasure that Dr. Whitmore be requested to at once furnish the hospital for the reception of thirty patients. The Small-pox Hospital is full, the hospital at Hampstead was full, and there were 1,000 cases in the metropolis waiting for admission—in fact, such was the pressure that a special meeting of the Asylum Board was to be held that day to consider whether another temporary hospital should be at once erected. It was then resolved unanimously that Dr. Whitmore be authorized to make the necessary accommodation in the way he had suggested. The *Medical Times and Gazette* states that at Liverpool there have been 37 deaths, or almost exactly one in four persons attacked with the disease. But the important feature is the manner in which these deaths are distributed. Thus, of the 37 not vaccinated, 19, or more than one-half, died; of the 39 with one mark, 5; of the 56 with 2 marks, 10; and of the 8 with 3 marks, none. Of the 3 with 4 marks, 1 died; but a special note is placed on his admission card as to his being the subject of advanced phthisis when attacked. When, moreover, the numbers of those who died with one or two marks on the arm are closely inspected, it is very instructive to note how the mortality rises in those cases where the word "faint" is appended concerning the cicatrix, and falls where the cicatrices are specially noted for their large size. Thus, of the seven whose arms presented a single large cicatrix, not one died; while out of the seven where the mark is stated to have been "faint" or "small" four died. Of the ten cases, again, where the two cicatrices were specially indicated as "large," there was no death; while of the six with two faint cicatrices three died. And it should be born in mind, as showing that there could not be any effect of even an unconscious leaning in the mind of the gentlemen making the report toward magnifying the value of vaccination, that the returns giving the state of the arm, &c., are made up daily and transmitted to the central office, while those of the deaths are not able to be given until days, and in some cases weeks, afterward.





TUESDAY, JAN

# FIRST EDITION.

## THE NINTH CENSUS.

### Complete Returns---Official Figures.

The following table, prepared by the Census Bureau at Washington, gives the total population of all the States and Territories of the Union, by the enumeration of 1870, as compared with that of 1860. Several statements, purporting to give the result of the last census, have been floating through the newspapers, but this is the first that has appeared with the official sanction. It will be seen that the total population of the United States in 1870 was 38,538,180, an increase in ten years of 7,064,859. This increase is not so much as was generally expected, but when it is considered that the great civil war of the last decade swept away several hundred thousand citizens, and that, perhaps, as many emigrants from abroad were discouraged from coming to our shores from the same cause, the country has really been doing very well. The greatest percentage of increase is in Nevada, and after it Nebraska. Two States only exhibit a decrease, Maine and New Hampshire. All the Western States show heavy percentages of increase, the Southern and Middle States a small increase, while New England is almost at a stand-still. The table is interesting and instructive:

States.	1870.	1860.	Gain per. ct.
Alabama.....	996,988	964,207	3.5
Arkansas.....	483,179	435,450	11
California.....	560,285	379,994	47.5
Connecticut.....	537,418	460,147	16.8
Delaware.....	125,318	112,216	11.5
Florida.....	187,756	140,424	33.8
Georgia.....	1,200,609	1,057,286	13.6
Illinois.....	2,539,638	1,711,951	48.4
Indiana.....	1,673,046	1,350,428	23.9
Iowa.....	1,191,802	674,913	76.6
Kansas.....	582,872	107,206	238.5
Kentucky.....	1,321,001	1,155,684	14.4
Louisiana.....	732,731	708,002	3.5
Maine.....	626,463	628,279	*.29
Maryland.....	780,806	687,049	13.7
Massachusetts....	1,457,351	1,231,066	18.4
Michigan.....	1,184,296	749,113	58.1
Minnesota.....	435,511	172,023	153.2
Mississippi.....	834,170	791,305	5.5
Missouri.....	1,715,000	1,182,012	45.5
Nebraska.....	123,000	28,841	326.5
Nevada.....	42,491	6,857	519.7
New Hampshire..	318,300	326,073	*2.4
New Jersey.....	905,794	672,035	34.8
New York.....	4,364,411	3,880,735	12.5
North Carolina...	1,069,614	992,622	7.8
Ohio.....	2,662,214	2,339,511	13.8
Oregon.....	90,922	52,466	73.4
Pennsylvania.....	3,515,993	2,966,215	21
Rhode Island.....	217,356	174,620	24.5
South Carolina...	728,000	703,708	3.5
Tennessee.....	1,257,983	1,109,801	13.4
Texas.....	797,500	604,215	42
Vermont.....	330,552	315,098	5
Virginia.....	1,224,830	1,219,630	.43
West Virginia....	445,616	376,688	18.3
Wisconsin.....	1,055,167	775,881	36
Total.....	38,095,680	31,183,744	21.1
Dist't of Columbia	131,706	66,089	75.5
Territories.			
Arizona.....	9,657	—	—
Colorado.....	39,706	34,277	15.9
Dakota.....	14,181	4,837	193.2
Idaho.....	14,998	—	—
New Mexico.....	20,594	—	—
New Mexico.....	91,852	93,516	*1.8
Utah.....	80,766	40,273	115.6
Washington.....	23,901	11,594	106.2
Wyoming.....	9,118	—	—
Total Districts and Territories.....	442,500	259,577	
Total of States....	38,095,680	31,183,744	21.1
Total U. States....	38,538,180	31,443,321	22.6

\*Loss.

### Population of New Jersey.

The official census returns for New Jersey have been made and vary somewhat from the numbers as first given. The population is less than was at first stated. The following are the figures by counties, giving the white and colored population:

Counties.	White.	Colored.	Totals.
	12,000	84	14,094



INSTANCES OF GREAT LONGEVITY.—Several noted cases of extreme longevity have been brought into discredit by the scrutiny to which they have been subjected in England, in a discussion as to the possibility or probability of men or women living over one hundred years. But if Henry Jenkins did not live 169 years, nor Thomas Parr 152 years, nor the Countess of Desmond 140 years, there are well authenticated cases in nearly every city and village of persons living over one hundred years. The obituary columns of the Ledger give repeated instances of extreme longevity, some of which can be verified without difficulty. Mr. Thurlow Weed, who is himself an old man, adds his testimony against those who carry the argument to such an extreme as to deny that men *can* live to be more than one hundred years old. The first instance on Mr. Weed's list is that of Mr. George Labar, of Monroe county, in this State, who is 112 years old; the second is Mr. George Trivle, of Daleville, Pa., the oldest hotel proprietor in the State, he being 109 years old, and the third is Captain Lakebush, of New York, who is over 108 years old. The latter was engaged in the service of the East India Company more than seventy-five years ago, and public records leave no doubt of his age. He has been a great traveller, speaks French, German, Dutch, Spanish, Portuguese and English, and retains possession of his faculties. The three instances cited by Mr. Weed are well authenticated. Thomas Dutton, a resident of Delaware county, in this State, who died a few years ago, aged over one hundred years, possessed family papers which, apart from the testimony of numerous old friends who knew him in his youth, incontestably established the truth of his reported age.



Another indictment against Sanborn, Hawley, and Vanderwerken, was found in the United States District Court this morning. The charge is, as in the former indictment, conspiracy to defraud the Government.

The horse disease has reappeared in some of the Brooklyn railway stables. The distemper takes the form of influenza, rather than the epizooty. Few deaths, however, are reported.

Mr. Joseph C. Williams, of the firm of George Bird Grinnell & Co., was restored to membership at the Stock Exchange this morning.

Coroners' inquests were held this morning in Brooklyn on the bodies of two women, named Ann Reynolds and Margaret Kelly, both of whom died from intemperance. The former died at the hospital and the latter at 374 Baltic street.

The markets, to-day, for the most part, were weak, for no other apparent reason, however, than the increasing disposition to await Congressional action on the finances.

Commercial paper is called a shade firmer. The business is chiefly within the range of  $5\frac{1}{2}$  to  $7\frac{1}{2}$  per cent. Lenders are inclined to keep their balances in hand under the impression that just before and after April 1st, call loans may be in quick demand to aid settlements among the farmers of New England, and that rates will consequently rule higher. For the present, however, the stereotyped figures for that class of loans must be repeated—3a4 per cent.

Private bankers have reduced their rates for sterling a faction. Drexel, Morgan & Co. quote the market steady at 4.85 for 60 days, and 4.88 for sight, less commission.

Gold opened at 111 $\frac{1}{2}$  and closed at the same figure, with intermediate sales at 112. The rates paid for carrying were 3, 3 $\frac{1}{2}$ , flat, and finally 4 per cent.

The \$1,000,000 offered by the Treasury elicited bids amounting to \$3,600,000, from fifteen different parties. The awards were to six of these, at 111.84 to 111.81.

Government bonds are rather easier, in sympathy with easier gold and a soft mar-



WASHINGTON, April 26.

COMPARATIVE PROGRESS OF POPULATION IN  
EUROPE AND THE UNITED STATES.

The President, during the last session of Congress, in compliance with a resolution of the Senate, transmitted to that body the report of Samuel B. Ruggles, delegate from the United States to the International Congress at the Hague, in the year 1869. It concludes as follows :

The preparation of this part of the report has been unavoidably delayed by the necessity of obtaining numerous statistics of the population of the various nations of Europe, not only at different periods, but frequently with boundaries largely changed, rendering the population tables of little value. It was also necessary to await the completion of the recent census of the United States in 1870, to show its progress in comparison with that of the States of Europe as a whole and also separately, and especially those who are to contribute, in any considerable degree, to the emigration into the United States. Reserving the full exhibition of these interesting particulars for a detailed report, it may now be stated, in general, that the rate of increase of the population of Europe during the century from 1770 to 1870, has varied but little from one per cent. yearly, of ten per cent. compounded at the end of every decade, having been largest in some of the earlier portions of the period, and diminishing with the last three or four decades until the present time, when it is but little more than six-tenths of one per cent. yearly, compounded at the end of this decade. Its population in 1870 did not exceed 120,000,000. In view of the diminishing fecundity in marriages (shown by the latter 4.4, in the United Kingdom, and only 3.3, in France for each marriage), and the constantly increasing laxity and changing manners of the civilized world, the ratio of increase of its population may very possibly continue to diminish, so that it would hardly be safe to assume, even for the United States, a greater ratio for the remainder of the present century, from 1870 to 1900, than two and a half per cent. yearly, and for Europe six-tenths of one per cent. yearly, both to be compounded at the end of each decade. It should, however, be borne in mind that a largely increased and steadily continued flow of European or Asiatic emigration into the United States may increase its population three or three and a half per cent. per annum, or even a higher figure.

At the moderate rates above specified, compounded every ten years, the population of Europe—amounting in 1870 to the aggregate of 298,000,000, at six-tenths of one per cent. yearly—will be increased in the year 1900 to 354,917,680; that of the United States—now 38,554,870—estimated at  $2\frac{1}{2}$  per cent., to 75,302,495; estimated at 3 per cent., 84,705,049.

Adopting the lowest of the preceding estimates for the United States for its population in 1900—being in round numbers 75,000,000—and reducing the rate of increase for the fifty years next succeeding to 1 per cent. per annum, compounded at the end of every decade, and the rate of increase in Europe to one-half of one per cent. yearly, similarly compounded, their comparative population in 1950 would stand in round numbers as follows :

Europe.....	453,000,000
The United States.....	120,500,000

Total .....	573,500,000
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If the rate in the United States should be, as some suppose, as high as 2 per cent. yearly, decennially compounded, the population in 1950 would be 179,000,000.

It should be understood that by the term "United States" is intended only the portion of America now possessed by the National Union. It should also be borne in mind that, while the aggregate population of Europe and the United States may amount to or exceed 573,520,000, the proportionate amounts of each may largely vary with the varying volume of emigration. On the one hand, it is possible that the aggregate itself may be largely increased, especially if reliance can be placed on sanguine estimates heretofore made in official documents; while, on the other hand, it may be seriously diminished by war, pestilence or other unforeseen calamities. In respect, however, to any possible danger of general famine, it may be safely assumed that, with the cereal capacities of the United States, now demonstrated by experience, its 75,000,000 of inhabitants in 1900 will be fully able to supply cereal food not only for themselves, but for at least 200,000,000 of the population of Europe.



to the family of the deceased.  
§ Attest—H. WHITEMAN, Secretary.

**MASONIC NOTICE.—THE MEMBERS** of Montgomery Lodge, No. 19, A. Y. M., the Grand Lodge, and the Order in general, are invited to meet at the Hall, on FRIDAY, 28th instant, at 11 o'clock A. M., to attend the Funeral of their deceased Brother, STILLWELL S. BISHOP.

By order of the W. M.  
265 CHARLES TIEL, Sec'y.

**PHILANTHROPIC LODGE, No. 15, I. O. of O. F.**—The Officers and Members and the Order in general are invited to meet at the Hall, N. Sixth street, THIS (Thursday) AFTERNOON, at 2 o'clock, to attend the funeral of their late Brother HENRY M. BARTLETT.

It\* JAMES BLELOCH, Sec'ry.

**ENERGETIC LODGE, No. 643, I. O. O. F.**—The members are requested to meet at the hall, N. W. corner of Third and Brown streets, on FRIDAY AFTERNOON, at 1 o'clock, to attend the funeral of Brother BENJAMIN F. MILLER.

\*31 ALAN C. LUKENS, Sec.

**O. U. A. M.—THE MEMBERS OF WASHINGTON Council, No. 5,** will meet at the Council Chamber, on FRIDAY, the 28th inst., at one o'clock, sharp, to attend the funeral of our late Brother, B. F. MILLER. Members of the Order are invited to attend. By order of the Councillor.

\*779 E. F. DRUMEL, R. S.

**UNITED DEGREE COUNCIL, No. 2, O. U. A. M.**—The members of the Council will assemble at the Hall, 1305 Lombard street, THIS DAY, at 1½ o'clock sharp, to attend the funeral of their late fellow member, HENRY M. BARTLETT.

By order of the Council.  
EDWIN P. WEST, C.  
Attest—ALLEN R. HALL, R. S. \*819

**HAND-IN-HAND COUNCIL, NO. 14, O. of U. A. M.** The members are requested to meet at the Hall, Lombard, above Thirteenth street, THIS (Thursday) AFTERNOON, April 27th, at 1 o'clock, to attend the funeral of our late Brother, H. M. BARTLETT. Members of other Councils respectfully invited. By order of the Council.

It\* Attest—CHAS. WIDDIS, R. Secretary.

**NEPTUNE HOSE CO.—MEMBERS ARE** respectfully requested to attend the Funeral of our late fellow-member, B. FRANKLIN MILLER, from his late residence, No. 467 Franklin st., on FRIDAY AFTERNOON, April 28th, at 2 o'clock.

2t\*414 B. F. HOOLEY, Sec.

**A SPECIAL MEETING OF THE GAS-**ton Memorial Missionary Society will be held THIS (Thursday) EVENING, at 8 o'clock, at their room, 1618 North Second street, to take action in reference to the death of their late Brother, JAMES LALOR. By order of the President.

\*822 F. W. BARTRUFF.

**HARMONY LODGE, No. 16, I. O. O. F.**—The members are requested to attend the meeting, TO-MORROW (Friday) EVENING, business interesting to the members and in which all are concerned, also the conferring of the Degree of Rebekah on members. \*243 WM. M. BOWEN, Sec.

**JR. O. U. A. M.—A REGULAR STATED** Meeting of Æolian Council, No. 17, Jr. O. U. A. M. will be held on THIS EVENING, the 27th inst. Lecture by Bro. N. Helverson, of O. U. A. M. Subject: Franklin, the American Mechanic and Statesman. Members of the Order invited.

By order of Council.  
It\* THOS. W. THORNLEY, R. S.

**A. O. G. F.—THE OFFICERS OF THE** Grand Lodge will visit Welcome Lodge, No. 40, on FRIDAY EVENING, to exemplify the degree work. \*196

**A. P. A.—MEMBERS OF LIBERTY** Lodge, No. 9, are requested to be punctual in attendance on TO-MORROW (Friday) EVENING, as it is quarter night; also election of Officers.

\*415 HUGH CURRY, R. S.

**A. P. A.—OFFICERS AND MEMBERS** of Star of Bethlehem Lodge, No. 26, are requested to meet at their hall, on SATURDAY EVENING, 29th inst., as quarterly night and election of officers take place. By order of the Lodge.

\*570 HENRY W. JOHNS, W. D. M.

**KNIGHTS OF FRIENDSHIP.—PRO-**tection Chamber, No. 8.—A meeting will be held at the S. E. corner of Tenth and Spring Garden sts., THIS (Thursday) EVENING, April 27th. Punctual attendance is requested.

By order of the Sir K. M.  
\*774 JOHN SCHWARTZ, Sec'y.

**PEACE TEMPLE, NO. 8, TRUE TEM-**ple of Honor.—Members are urged to be punctual in attendance THIS EVENING, April 27. Business of importance to every member.

\*237 G. A. WILLIAMSON, Recorder.

**CADETS OF TEMPERANCE.—GRAND** Section of Pa.—Quarterly Session TO-MORROW (Friday) EVENING, at 8 o'clock, at S. W. cor. Sixth and Girard ave. B. F. DENNISON, G. S. \*252

**STATE GROTTO OF PENNA., S. AND** D. of A. A.—A regular quarterly session will be held on THIS EVENING, April the 27th, at the hall of Philadelphia Degree Grotto, No. 1, N. E. corner Ninth and Spring Garden sts. The attendance of Representatives is earnestly requested.

It\* JOHN J. McLAUGHLIN, G. Sec'y.

**A REGULAR STATED MEETING OF** the Journeymen Upholsterers' Beneficial Union, will be held FRIDAY EVENING, 28th inst., at the hall, N. W. corner of Third and Brown streets. An in-



THE DENSITY OF POPULATION in China, it is stated, is greatly exaggerated. In Kwantung, from which province most of the Chinese in California have emigrated, it is reported there are about 240 persons living in a square mile, and in the three provinces next, inland, the population is 70 to the square mile. On comparing the countries of Europe with China, it appears that in Belgium there are 436 persons to the square mile, and in some of the provinces there are as many as 700 to the square mile. Again, England has 370 inhabitants to the square mile; Ireland 180, and Scotland 90. The average per square mile in Europe is less than 150, and is about 300 in the entire empire of China. The religious beliefs in China are nearly as heterogeneous as in Europe, and the Chinese are Confucians, Buddhists and Taoists, and sometimes profess all three of these faiths.



Member of the Executive Council of Massachusetts, member of the Massachusetts War, and member of the United States of Representatives—fourteen offices. General Cass held more public offices than any man Buren ever succeeded in getting, for he was a member of the Ohio Legislature; United States Marshal for the District of Ohio, Colonel of Volunteers in the war of 1812, Colonel in the United States Army, Major General in the United States Army, Brigadier General in the United States Army, Governor of Michigan, Superintendent of Indian Affairs in the Northwest, United States Secretary of War, Minister to France, United States Senator, and United States Secretary of State—twelve offices. We must not forget to mention Andrew Johnson, who was Alderman of Greenville, Mayor of Greenville, member of the Tennessee Senate, member of the Tennessee House of Representatives, member of the United States of Representatives, member of the United States Senate, Governor of Tennessee, Vice President of the United States, and President of the United States—ten offices, or quite up to the number.



## THE CENSUS OF 1870.

### Changes of Population in Ten Years.

The following statistics, from full returns of the ninth census, are interesting :

States.	1870		1860	
	Popula.	Rank.	Popula.	Rank.
Alabama .....	996,992	16	964,201	13
Arkansas.....	484,471	26	435,450	25
California .....	560,247	24	379,994	26
Connecticut .....	537,454	25	460,147	24
Delaware.....	125,015	34	112,216	32
Florida.....	187,748	33	149,124	31
Georgia.....	1,184,109	12	1,057,286	11
Illinois.....	2,539,891	4	1,711,951	4
Indiana.....	1,680,637	6	1,350,428	6
Iowa.....	1,194,020	11	774,913	20
Kansas.....	364,399	29	107,206	33
Kentucky.....	1,321,011	8	1,155,084	9
Louisiana.....	726,915	21	708,002	17
Maine.....	626,915	23	628,279	22
Maryland.....	780,894	20	687,049	19
Massachusetts.....	1,467,351	7	1,231,066	7
Michigan.....	1,184,559	13	749,113	16
Minnesota.....	439,706	28	172,023	30
Mississippi.....	827,922	18	791,305	14
Missouri.....	1,721,296	5	1,182,012	8
Nebraska.....	122,993	35	28,841	36
Nevada.....	42,491	37	6,867	37
New Hampshire.....	318,300	31	326,073	27
New Jersey.....	966,096	17	672,035	21
New York.....	4,382,759	1	3,880,735	1
North Carolina.....	1,071,361	14	992,622	12
Ohio.....	2,665,260	3	2,339,511	3
Oregon.....	90,923	36	52,645	34
Pennsylvania.....	3,521,951	2	2,906,215	2
Rhode Island.....	217,353	32	174,628	29
South Carolina.....	705,606	22	703,707	18
Tennessee.....	1,258,520	9	1,109,801	10
Texas.....	818,579	19	604,215	23
Vermont.....	330,551	30	315,098	28
*Virginia.....	1,225,163	10	1,219,630	5
Wisconsin.....	1,054,670	15	775,881	15
West Virginia.....	441,814	27	376,688	*
Total.....	38,115,641		31,183,744	
Arizona.....	9,658	...	6,482	...
Colorado.....	39,864	...	34,277	...
Columbia.....	131,700	...	75,080	...
Dakota.....	14,181	...	4,837	...
Idaho.....	14,999	...	.....	...
Montana.....	20,595	...	.....	...
New Mexico.....	91,874	...	87,034	...
Utah.....	86,786	...	40,273	...
Washington.....	23,955	...	11,594	...
Wyoming.....	9,118	...	.....	...
Total Territories....	442,730		259,577	
Grand Total.....	38,558,371		31,443,321	

Virginia and West Virginia were not divided in 1860, and together ranked 5, as marked opposite Virginia.



W. Allen,  
Scull Jr., & Bro.,  
& S. H. Newhouse,  
Hess, Rogers & Chambre,  
Brenniser & Atkins,  
Rosenthal, Long & Co.,  
A. P. Schonemann & Bro.,  
Geo. W. Reed & Co.,  
Young, Smyth, Fields & Co.,  
H. C. Trunick & Co.,  
Buehler, Bonbright & Co.,  
Sellers & Kern,  
Cresswell, Slack & Gemmill,  
Elliott Brothers,  
Adamson, Spencer & Co.,  
Mellor, Bains & Mellor,  
Greene & Platt,  
M. A. Furbush & Son.,  
Hollowbrook & Cary,  
Fries, Malseed & Hawkins.  
French, Richards & Co.,  
Jas. A. Stone,  
Snyder, Harris, Bassett & Co.,  
Burns & Smucker,  
Newlin, Fernley & Co.,  
A. H. Franciscus & Co.,  
And many others.

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COUGH, COLD OR SORE THROAT, requires immediate attention, as neglect oftentimes results in some incurable Lung Disease. *Brown's Bronchial Troches* will almost invariably give relief.

---

UNFADING LOVELINESS belongs only to the mortals, but whoever uses the fragrant Sozont can at least defy time to injure one of the elements of beauty, a good set of teeth.

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### CHILDREN'S CLOTHING.

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A VARIETY OF  
HANDSOME CLOTHING  
FOR CHILDREN,

See for Children



U. S. Population,  
1870.

Men & boys - 19,493,665

Women & girls 19,064,806

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Difference 428,859

In Europe average,  
Births  
Males, 106

Females, 100.

---

Prof. Elias, Fidd exploring  
after 1872, found in Arizona  
tools, pottery, & woven cloth  
weapons & signs of ancient



Cap. pun.

virtually abol. for  
several years in many of  
the German States -  
several Als. States -  
virtually abol. in Belgium,  
abol. in Portugal -  
to a large extent in Rus-  
sia except for certain  
treasonable crimes -  
in Sweden but here  
for many years; abol.  
in several cantons of  
Switzerland, practically  
in all of them, beginning with  
Neuchâtel in 1854.



## EDITORIAL.

## INCREMENT OF POPULATION.

ACCORDING to a recent English journal, the following table represents accurately the increase in the commerce and population of the Christian world during the last seventeen years. It is of great interest on account of its bearing upon the questions whether the population multiplies too fast for the good of the race, and whether the general comfort of the individual is being increased or decreased :

	FOREIGN COMMERCE.		POPULATION.	
	1855.	1872.	1855.	1872.
Great Britain.....	£268,400,000	£609,600,000	27,620,000	32,000,000
France.....	159,300,000	285,800,000	35,750,000	36,100,000
United States.....	107,340,000	232,800,000	27,000,000	41,000,000
Belgium.....	69,000,000	199,800,000	4,530,000	5,100,000
Germany, imp'ts only.	53,200,000	100,000,000	33,500,000	39,400,000
Austria.....	26,000,000	89,400,000	36,500,000	35,900,000
Russia in Europe.....	45,400,000	103,000,000	65,000,000	71,000,000
Italy.....	32,200,000	103,600,000	18,850,000	27,000,000
Spain.....	32,500,000	27,800,000	15,600,000	16,370,000
Netherlands.....	54,000,000	88,000,000	3,433,000	3,650,000
Sweden.....	9,000,000	14,600,000	3,660,000	4,100,000
Total.....	£848,340,000	£1,855,200,000	271,443,000	311,620,000
Increase in 17 years (commerce).....				118.5 per cent.
Increase in 17 years (population).....				14.8 per cent.
Foreign commerce in 1855 per head of population.....			£3.13	
Foreign commerce in 1872 per head of population.....			£5.95	
Increase per cent.....				90

The most striking deduction to be made from this table is not the great increase of commerce, but the fact that in seventeen years the amount for each individual has nearly doubled. There has been a slow growth in the number of the people, but a very rapid growth in the commerce. Commerce is an index of wealth, and increase of wealth means, in the highest degree, augmentation of physical comforts and well-being. Evidently there is no present danger of the race becoming extinct by an increase



teen Districts, each of which has a Censorial Board of three members, to which one member from each County Medical Society is eligible.

Other less important amendments, offered at the last meeting of the Society, were read, and adopted without opposition.

On motion of Dr. Green, the Society adjourned to give the County Societies opportunity to select their representatives for the Committee on Nominations.

*Wednesday Evening.*—The Society assembled in the auditorium of Pardee Hall at 8 o'clock. The Hall was filled with ladies and gentlemen from the College and town. Some of the members of the Society have their wives with them, and they were present also. On the stage sat the former Presidents of the Society, the Vice-Presidents, and Dr. Traill Green, who introduced Dr. S. B. Kieffer, of Carlisle, the President of the Society, who delivered the annual address, which was received with much applause and by motion was referred to the Committee on Publication.

Before adjournment the Committee on Nominations was announced by the Secretary, viz.: Beaver, Dr. Jackson; Berks, Dr. Weidman; Allegheny, Dr. Wood; Blair, Dr. Clark; Bradford, Dr. Conklin; Columbia and Montour, Dr. Pursell; Cumberland, Dr. Mosser; Dauphin, Dr. Orth; Delaware, Dr. Roland; Franklin, Dr. Snively; Huntingdon, Dr. Shade; Indiana, Dr. Rutledge; Lancaster, Dr. Davis; Luzerne, Dr. Murphy; Lycoming, Dr. Crawford; Mercer, Dr. Fulton; Mifflin, Dr. Hersberger; Montgomery, Dr. Conson; Northampton, Dr. Bachman; Perry, Dr. Swartz; Venango, Dr. Richey; Clearfield, Dr. Burchfield; Philadelphia, Dr. Eshelman; Schuylkill, Dr. Halberstadt; Susquehanna, Dr. Ainey; Tioga, Dr. Maine; York, Dr. Bailey.

#### SECOND DAY.

*Thursday Morning.*—The early part of the morning was occupied by the members of the Society in inspecting the College buildings, museums, laboratories, and halls, and in the preliminary meetings of committees.

The Society was called to order at half-past nine o'clock, in Pardee Hall, the minutes of the previous meeting being read and approved.

An address, prepared by Dr. Thomas M. Drysdale, of Philadelphia, now travelling in Europe, was first read,—subject, "Surgery,"—Dr. Washington L. Atlee, of Philadelphia, reading the report by request.

Dr. Drysdale chose Tracheotomy, regarding it as equally important to the surgeon and the practitioner, "since it brings back to life one who is suffocating and



1874

## THE WORLD'S POPULATION.

A Report from the U. S. Bureau of Statistics, at Washington, just issued, contains an interesting table of the population of the earth, taken chiefly from the work on that subject issued this year, at Gotha, by Drs. Behm and Wagner, and founded on the most recent authorities. By this statement the aggregate population of the earth is given at 1,391,032,000, Asia being the most populous section and containing 798 millions, whilst Europe has 300½ millions, Africa 203 millions, America 84½ millions, and Australia and Polynesia 4½ millions. In Europe the leading nations are credited with the following numbers: Russia, 71 millions; the German Empire, 41 millions; France, 36 millions; Austro-Hungary, 36 millions; Great Britain and Ireland, 32 millions; Italy, nearly 27 millions; Spain, 16½ millions, and Turkey nearly 16 millions. The other countries do not exceed five millions each. In Asia, China, which is by far the most populous nation of the earth, is credited with 425 millions; Hindoostan, with 240 millions; Japan, 33 millions; the East India islands, 30½ millions; Burmah, Siam and farther India, nearly 26 millions; Turkey, 13½ millions, and Russia, nearly 11 millions. The Australian population is given at 1,674,500, and the Polynesian Islands at 2,763,500, New Guinea and New Zealand being included in the latter. In Africa the chief divisions are West Soudan and the Central African region, with 89 millions; the Central Soudan region, 39 millions; South Africa, 20¼ millions; the Galla country and the region east of the White Nile, 15 millions; Samauli, 8 millions; Egypt, 8½ millions, and Morocco, 6 millions. In America, two-thirds the population are north of the Isthmus, where the United States has nearly 39 millions, Mexico, over 9 millions, and the British Provinces, 4 millions. The total population of North America is given at nearly 52 millions, and of South America 25½ millions, of which Brazil contains 10 millions. The West India Islands have over 4 millions, and the Central American States not quite 3 millions.

According to these tables London, with 3,254,260 inhabitants, is the most populous city in the world, whilst Philadelphia, with 674,022 inhabitants (in 1870), is the eighteenth city in point of population. These eighteen cities, in their order, are the following: London, 3,254,260; Sutchan (China), 2,000,000; Paris, 1,851,792; Pekin, 1,300,000; Tschantschau-fu, 1,000,000; Hangtschau-fu, 1,000,000; Siangtan, 1,000,000; Singnan-fu, 1,000,000; Canton, 1,000,000; New York, 942,292; Tientsin, 900,000; Vienna, 834,284; Berlin, 826,341; Hangkau, 800,000; Tschingtu-fu, 800,000; Calcutta, 794,645; Tokio (Yeddo), 674,447; and Philadelphia, 674,022. Of cities smaller than Philadelphia, the leading ones are: St. Petersburg, 667,963; Bombay, 644,405; Moscow, 611,970; Constantinople, 600,000; Glasgow, 547,538; Liverpool, 493,405; and Rio de Janeiro, 420,000.



# ER.

1874  
 Pope  
 Alford

## TEN CENTS PER WEEK.

### The Chicago Fire—Official List of the Insuranees.

CHICAGO, July 16.—The following is a complete official list of the insurance by companies on the property destroyed by Tuesday's fire:

Adriatic, New York .....	\$28,000
Ætna, New York .....	2,500
Ætna, Hartford .....	95,000
Allemania, Cincinnati .....	50,000
Allemania, Pittsburg .....	20,000
Amazon, Cincinnati .....	25,000
American Central, St. Louis .....	20,000
American Fire, Philadelphia .....	25,000
American Mutual, Newark, N. J. ...	7,500
American Underwriters, Philada. ...	500
Arctic, New York .....	1,500
Armenia, Pittsburg .....	1,500
Atlantic and Pacific, Chicago .....	47,000
Atlantic, New York .....	3,500
Atlas, Hartford .....	1,500
Bangor, Bangor, Maine .....	1,000
Benjamin Franklin, Allegheny City, Pennsylvania .....	3,500
Black River, Watertown, N. Y. ....	4,000
Brewers and Malsters', N. Y. ....	24,000
Brewers', Milwaukee .....	50,000
British America .....	5,000
Buffalo, German .....	1,000
Citizens', New York .....	13,000
Citizens' Newark, N. J. ....	9,000
Citizens', St. Louis .....	9,000
Clay Fire & Marine, Newport, Ky. ...	12,700
Connecticut, Hartford .....	5,000
Continental, New York .....	97,000
Commerce, New York .....	9,500
Commerce, Albany, N. Y. ....	6,000
Commercial, St. Louis .....	29,300
Commercial Union, London, Eng. ...	95,000
Detroit Fire and Marine, Detroit ...	1,500
Equitable, Nashville .....	5,000
Exchange, New York .....	20,500
Faneuil Hall, Boston .....	1,500
Fame, Philadelphia .....	2,000
Fairfield County, Norwich .....	15,875
Farmers' Mutual, York, Pa. ....	16,000
Farragut, New York .....	13,000
Fire Association, Philadelphia ...	25,000
Firemen's Fund, San Francisco ...	18,500
Firemen's Fund, New York .....	7,000
Firemen's, Dayton .....	2,500
Franklin, Wheeling, W. Va. ....	7,000
Franklin, Indianapolis .....	5,000
Franklin, Boston .....	5,400
German American, New York .....	50,100
German, Erie, Pa. ....	23,000
German, Freeport, Ill. ....	11,400
German, Quincy .....	7,000
Germania, New York .....	12,500
Girard, Philadelphia .....	59,000
Glacier, New York .....	17,000
	75,000



Mortality of Children -  
Reimer Es. p. 249

Statistics of Mortality -

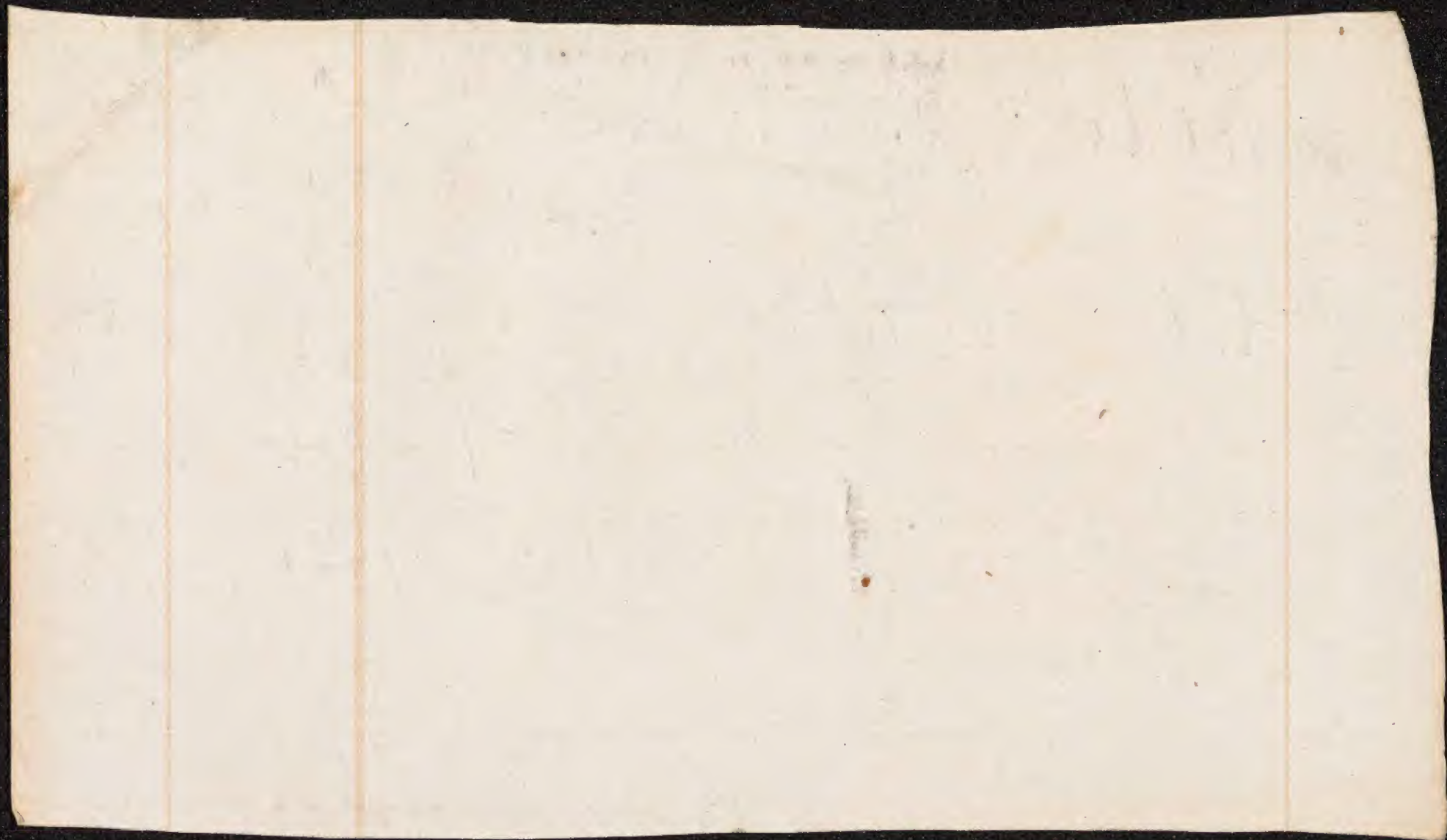
Tranquil S. Soc. p. 48-9 - 50 -

p. 352 - 3 - 355 - 9 - 360, 362, 365 - 6 - 7

376 - 7 - 8 - 384 - 5

Lengths of life. S. Smith Tr. S. S. p. 498 &







are more to be pitied, and if we carefully study the ratio of sickness to death we shall find for every person who dies there are two persons sick all the time in every community. If 32,000 die in New York per annum, 64,000 are sick all the time; that is, sick for the entire year. But for the deaths from day to day it is estimated that for each death there are about 30 cases of sickness. In Manchester Dr. Playfair found it was 28 for each death, while the average duration of each sickness is about 20 days. A careful record was kept not long ago in the Metropolitan Police in regard to the amount of sickness. The Metropolitan policemen were selected by physical examination, and were as healthy a body of men as could be got together. They were governed also by tolerably strict and severe rules, by which their health was protected to a considerable degree.

It was found by a careful investigation over a period of four years, from 1864 to 1867 inclusive, that the total number of deaths in the force amounted to only  $12\frac{1}{3}$  in a thousand per annum; that is, it was only a little more than one-third as much as the average death-rate for the entire city. It was found, however, that the average sickness was  $11\frac{1}{2}$  days per annum. Every man in the force averaged a loss of  $11\frac{1}{2}$  days every year. Now taking the rate of  $12\frac{1}{3}$  deaths and multiply it by 30, the usual number of sicknesses, there must have been on an average 370 cases of sickness constantly, and multiplying this by 20, the number of days' average sickness, we have in this force of a little over 2,000 men a loss of 7,400 days by sickness. But we find that they actually lost 11,000 days by sickness, which would amount to  $31\frac{1}{2}$  years of labor. The value of the time actually lost by that little body of men by sickness was \$37,000 a year.

Proportion of Sickness to Mortality.



(deaths, removals, new appointments) have been made in the lists of the States in which the Company is doing business. Besides these weekly or semi-monthly reports to the different companies, the person in charge of the Central Bureau should make a monthly report to the executive or financial committee of the Chamber. But here we are encroaching upon territory which belongs more properly to the business man than to the physician. Enough, however, has been said to show that the plan of organizing a large body of medical experts—or at least men who in time may become experts—is neither Utopian in character nor involved in difficulties which a committee of physicians and business men might not readily overcome. Essentially the same plan has been tried with good results by at least three or four companies, but the expense connected with it has been so great as to frighten other companies from following the same course. The present co-operative movement, if carried into effect, would reduce the pro-rata expense to a comparatively low figure, while, on the other hand, it would very greatly increase the value of the examiners' services to the companies employing them, by impressing them with a greater sense of responsibility, by rendering the position more lucrative and hence more desirable, and, finally, by giving them more frequent opportunities for acquiring the experience necessary to make them experts.

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## MORTALITY OF NEW YORK.\*

BY PROF. CHARLES F. CHANDLER, PH.D.

IN studying sanitary questions, one of the first points is to get at the facts, and for this reason what are called



Death.



1000



Modes of Death:

1. Natural decline of old age.

2. Sudden shock.

3. Blood-poisoning.

4. Dereliction of action of  
Heart, — Lungs, — or Medulla  
Oblongata. (Tripod of Life.)

(This of course may result indirectly, from disease  
primarily in some other organ).

Death by syncope — (Heart)

apnoea — (Lungs)

asthenia — (spinal axis)



Death, — the expected guest at  
every door, — ~~the~~ bed-fellow for every couch,  
— auditor of all accounts at last;  
yet, who need not ever be unwelcome,  
— being, in fact, much more often  
dreaded afar off than near.

Death is a physiological necessity  
of nature, — even to man; even to this most  
apt and wonderful frame of Man;  
which, being the brief epitome of all  
the worlds, bears the reflex of  
Omnipotence itself.



<sup>have</sup>  
I spoken ~~of death~~ of death,  
as the physiological law of  
the human organism, as of every  
form and structure which bears  
the stamp of terrestrial life. On  
all is ~~utter~~ change, and on all,  
whatever the comparative duration  
of each, mortality.

We are, in fact, dying every day.  
What we are, today, today, we  
were not yesterday, and will not  
be tomorrow.

So, to trace the dust of Alexander,  
till we find it stopping a bug-hole,  
we need not even wait for his burial.  
For every day we lose enough, to  
make an important difference in the  
creation.

And, as surely as <sup>that</sup> each river  
~~will~~ will at last reach the sea,



~~although~~ although the waves that  
compose it ~~are~~ <sup>are</sup> followed  
by other waves, — so surely will  
an end <sup>at last</sup> come to the moving together  
of those atoms which we call the  
substance of our bodies.

But, as surely <sup>again</sup>, as that the  
drops of that river will again  
rise in air, — (so we might add)  
to appear again, in the rainbow  
or in the cloud, — so will also somewhat  
rise from our existence as it now  
is, — to appear in a more ethereal  
form, which, neither analogy  
nor experience, — nor reason  
nor revelation, forbids us to  
believe may <sup>the immortality of the spirit</sup> be immortal: ~~that~~  
This is not <sup>now</sup> of our experience: — and we  
do well to believe <sup>things</sup> ~~only~~ <sup>only</sup> what  
we are told by authority which  
cannot err. — There is, then, with death,  
the greatest of terrestrial evils, the greatest of celestial  
consolations. And when, as ~~must~~ <sup>often happens</sup>, the physician cannot, <sup>save</sup> ~~save~~ life, it is his duty to promote the euthanasia

human and assistance  
medical art and his  
Christian sympathy



<sup>must speak,</sup>  
~~I spoke, next,~~ of disease  
~~not physiological or natural,~~ as  
as having origin always in causes  
which are abnormal, and unnatural;  
resulting from the degeneracy of the  
human frame from its original type  
the debility of its <sup>present</sup> constituent type-  
power, — and the unnatural, artificial,  
influences which man's will,  
unaided by conscience or reason,  
or even instinct, has accumulated  
or perpetuated about him & within  
him.

I might have appropriately  
~~added~~, while speaking of the contrast  
afforded by ordinary humanity to  
our ideal of its type, — that  
we now and then <sup>amongst us</sup> see, men,  
and women, who exemplify, or  
remind us somewhat of that ideal.  
of such men, <sup>one</sup> was he whom we



have just lost, — who spoke  
so often  
to you from this desk, and in  
this room; — and whom no man  
living, except I be his nearest  
relatives, mourns as much as I.  
He was one of the dearest friends I ever had.  
He was a type of manhood:  
to him better than almost any  
one I ever knew, might be applied  
the beautiful language of Hamlet, —  
"What a piece of work is man!  
In form and moving, how express  
and admirable! In action, how  
like an angel! In apprehension  
how like a god! The beauty  
of the world! The paragon of beings!"

And we do not ascribe  
in the fatal result which <sup>so</sup> struck  
him down, as the whirlwind does the  
oak-tree, — much, if anything, to



And how far have we deviated,  
in everything, from the type of our  
race! So long has our separation  
from it existed, that we have no  
memories, except those handed  
down by old tradition, & arrived  
in the ideal of the Poet, to  
compare ourselves with.

But I hold, that, when we  
~~look on~~<sup>or think of</sup> the beauty of a Helen,  
or a Cleopatra, or a Mary Queen  
of Scots, — or the magnificent shape  
of a Gladiator, a Count D'Orsay, or  
an Old Bull, — we see <sup>or conceive</sup> what, rare  
as they are now, — should be, not the  
exceptions, but the type of the race!  
Such were our Father Adam, and our  
<sup>mother</sup> Eve; and Eve would not have been  
the "fairest of all her daughters," if



those daughters had not begun  
at once to feel the ban of  
degradation.

And even in mental, or  
cerebral characteristics: the  
profundity of Newton, <sup>or Davy</sup>, the  
eloquence of Patrick Henry,  
the poetry of Byron, the invention  
of Scott, <sup>and the virtues of those we most love & admire,</sup> — rare as we deem  
them now, — I cannot but be-  
lieve <sup>these</sup> to be more near the type  
of human capacity, <sup>more in</sup> the line  
of our original destiny, <sup>than</sup>  
the dull, heavy <sup>& soul-less</sup> stolidity of com-  
monplace men nowadays.

The brightest, purest ideal  
that sculptor, painter, poet,  
ever dreamed of, <sup>to me</sup> seems more near to it  
than the average man of the 19th  
century.



Even those religionists who  
deny the doctrine of degeneration  
in their system of theology, are  
obliged, in history and practical  
life, to acknowledge much of its  
truth and reality.

Man <sup>his</sup> reason — brutes <sup>their</sup> instinct protects:

So that, when man refuses to use his reason  
~~existence~~ in guidance of his action, &  
is governed instead by blind passion &  
grovelling sense, he falls below the brutes, &  
suffers more.







deteriorated resistance in the  
life force <sup>of the system</sup> - the constitutional  
resistance seemed unimpaired.  
But, the evil lay <sup>here, as in many other cases,</sup> in the  
causes of disease; <sup>Disease is to be ascribed, then, to,</sup> those morbid  
causes, - which the wronggoing  
of ~~man's~~ habits for 6000 years  
has originated, propagated, & developed,  
until they assume an existence  
and material <sup>as the forms they inherit</sup> <sup>& these acting on a deteriorated</sup> <sup>hereditary type of constitution</sup>  
is real, <sup>as the forms they inherit</sup> <sup>& these acting on a deteriorated</sup> <sup>hereditary type of constitution</sup>  
Out of these grows Pathology;  
out of them comes  
and the need of Therapeutics and of  
Materia Medica, out of the knowledge of  
these comes the only hope of doing anything by  
we must say a few words for a  
Therapeutics & the Materia Medica. For, if the  
vital force were perfect, & perfectly met by  
the adaptation of external nature, it would  
need no aid, & could not be helped by our  
meddling in the restoration of the body from such  
slight & temporary derangements as could occur: be  
methuselah &c.



This, then Gentlemen, is my  
Theory of Medicine; that, as

are artificial,

so artificial in  
-terference is justified; but

that as disease is but a perversion

not a reversal, of the natural

type of ~~the~~ functional action of

the body, Pathology <sup>being</sup> only an error

Physiology - with the same

<sup>physiological</sup> laws still acting underneath the

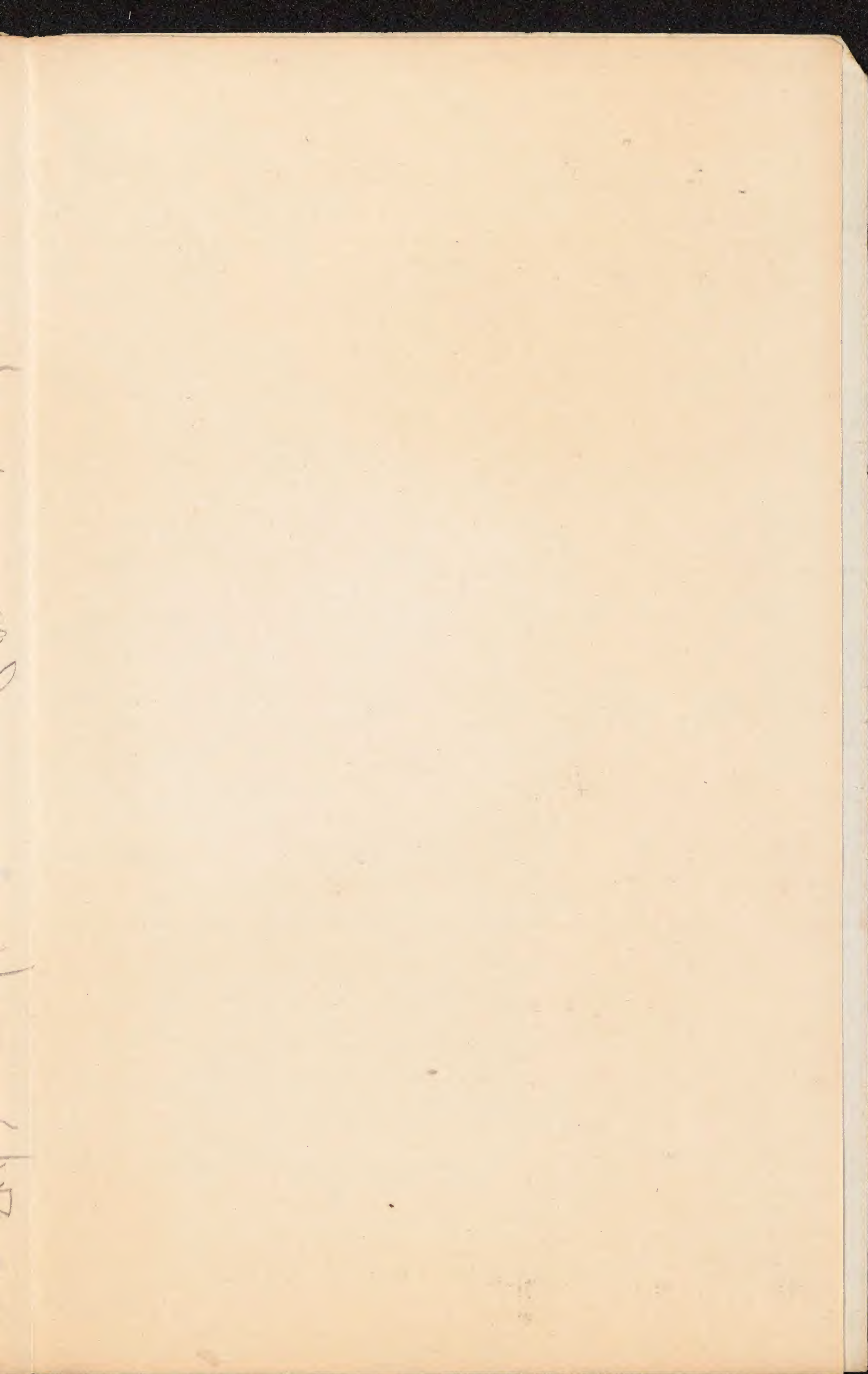
morbid resistance, - so we

must follow the laws & indica-

-tions of nature in undertak-

ing ~~the~~ ~~medicinal~~ ~~restoration~~







The following is a copy  
of the letter from the  
author to the publisher  
dated 18th March 1841  
and is a copy of the  
original letter as it was  
written by the author  
and is not a copy of the  
letter as it was written  
by the publisher. The  
letter is written in the  
author's own hand and  
is a copy of the original  
letter as it was written  
by the author and is not  
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